AMERICAN BEE JOURNAL

October
1942

CONTAINERS

Large stock on hand

Wide range for selection

Prompt shipment assured

Order your needs now

BEESWAX WANTED

Send your beeswax, cappings or old comb to us for highest prices. Prompt and fair settlement made.

Shipping tags furnished on request.

Let us serve you

•

THE A. I. ROOT CO. OF IOWA

COUNCIL BLUFFS, IOWA

Beeswax Wanted

We are now paying high prices for beeswax. If you have beeswax to dispose of, write to us for a quotation.

Are You Losing Beeswax?

Our steam wax presses get every available ounce of beeswax out of old combs, cappings, and slumgum. If you are rendering your own or having this work done elsewhere, give us a chance to show you what we can do. We often get from 10 to 40 per cent of wax from such material.

Send for terms *Ship us your beeswax*

Prices are high

DADANT & SONS

HAMILTON, ILLINOIS

True Label Characters

- *Designs that Compel Attention*
- *Colors that Blend and Please*
- *Wording that Makes a Sale*

Our Labels meet these requirements at very reasonable prices

Send for samples.

•

American Bee Journal

Hamilton, Illinois

HONEY CONTAINERS

We have a complete stock of all sizes glass and tin containers for packing honey.

TIN CONTAINERS:

5 lb., 10 lb. Pails. 60 lb. Cans.

GLASS CONTAINERS:

5 lb., 2½ lb. Glass Pails.
½ lb., 1 lb., 2 lb. Masterline Jars.
½ lb., 1 lb., 2 lb. Bee Hive Jars.

•

WRITE FOR NEW PRICE LIST ON CONTAINERS

•

Remember—We also carry a complete line of other honey packages, including Shipping Cases, and Comb Honey Cartons.

•

August Lotz Company

Boyd, Wisconsin

—Photo from Ben Baggerly, Macon Georgia.

CONTENTMENT

Editors: G. H. Cale, Frank C. Pellett, M. G. Dadant, J. C. Dadant

October, 1942 Volume LXXXII No. 10

CONTENTS

Guest Editorial—A Word to the Wise—John W. Holzberlein, Jr. ... 429
This Fellow Webb ... 431
Honey Prices ... 431
The Beeswax Situation ... 432
Shall We Winter the Bees?—G. H. Cale ... 436
The Finger Lakes Honey Producers' Cooperative—E. J. Dyce ... 438
Preparation of Bees for Winter—Carl E. Killion ... 441
Two Queens Before Flow Starts But Not After—Ben M. Knutson ... 442
The Colloid Chemistry of Soils—E. L. Sechrist ... 444
Editorial ... 466
An Inexpensive Packing Case—Harry Newmann ... 448
Further Facts on Father Ferlin's Frame ... 449
Caucasians vs. Italians in the North—W. H. McMullen ... 450
Recipes ... 452
This and That ... 453
Meetings and Events ... 454
Crop and Market Report—M. G. Dadant ... 459
The Postscript—Frank C. Pellett ... 464

Published monthly at Hamilton, Illinois. Entered as second class matter at the Postoffice, at Hamilton, Illinois. In United States, Canada, and Mexico, $1.00 a year; two years $1.50; three years $2.00; Foreign $1.25 a year; two years $2.00; three years $2.75. Subscription stopped at expiration printed on wrapper.

BEESWAX

You will want to save all of the wax you possibly can. Prices are high. Demand is good. The Army and Navy will need a lot of it the coming twelve months. Write us for prices. They are high now.

Cull out your poor combs, cut deep cappings, prevent loss by beemoth. Save your combs, scrapings, cappings and slumgum (slumgum is a refuse from the renderings of combs and cappings).

Ship to us in lots of 100 lbs. or more by freight collect and let us render it for you. We can please you.

Mr. May says

Dadant & Sons,
Hamilton, Illinois.

"I received credit slip for the beeswax you rendered out of the three bags of slumgum, recently sent you. I was sure surprised, as I actually thought you might get 15 pounds or less out of it and the way it turned out you got 31½ pounds or just about as much as I got out of the old crooked combs when I rendered them. Your steam presses sure get the wax and I am well pleased with the results."

Illinois, July 25, 1942.

Fred H. May.

If you have several hundred pounds of slumgum accumulated, send us 100 pounds and let us test it for you. Ship by freight collect. If it contains no beeswax we will charge you nothing for the test. We will pay the freight. If it does contain a fair amount of wax, we will make a reasonable charge and pay you for the beeswax secured. ***You risk nothing. Our terms for rendering sent on request.***

DADANT & SONS : Hamilton, Illinois

Makers of Famous Foundations—Crimp-Wired, Plain, Surplus

—Photo by Paul Hadley, Piggott, Arkansas.

GOLDEN BLOOMS OF THE SPANISH NEEDLE

ADVERTISERS' INDEX

Aeppler Co., C. W. ---- 459
American Bee Journal, 428, 457, Inside front cover, Inside back cover.
American Honey Institute ---- 463
American Pigeon Journal ---- 455
American Rabbit Journal ---- 462
Australasian Beekeeper ---- 456
Beekeepers Item ---- 462
Bessonet Bee Co. ---- 462
Bolling Bee Co. ---- 456
Bordelon Apiaries, E. J. ---- 457
Calvert Apiaries ---- 462
Canadian Bee Journal ---- 462
Caucasian Apiaries ---- 457
Citronelle Bee Co. ---- 455
Dadant & Sons, 426, 458, Inside front cover, Inside back cover.
Davis Bros. ---- 456
Forehand, N. ---- 456
Forehand & Sons, W. J. ---- 456
Garon Bee Co. ---- 428
Goat World ---- 462
Graydon Bros ---- 463
Hann, Albert G. ---- 455
Iverson Honey Co. ---- 459
Jensen's Apiaries ---- 468
Jewett & Sherman ---- 459
Kelley Co., Walter T. ----457, 463
Koehnen Apiaries ---- 462
Lewis Co., G. B.---- 430
Lotz Co., August--Inside front cover
Magazine Mart ---- 463
Marshfield Mfg. Co.----Inside back cover.
Muth Co., F. W.----457, 462
Puett Co. ---- 457
Red Stick Apiaries & Co. ---- 463
Robinson Wagner Co. ---- 457
Root Co. of Chicago, A. I., Inside back cover.
Root Co of Iowa, A. I.--Inside front cover.
Root Co., A. I. ----462, Back cover
Rossman & Long ---- 455
Rusch & Son Co., A. H.---- 463
St. Romain's "Honey Girl" Apiaries ---- 456
Seifert & Mann ---- 455
Standard Rabbit & Pet Journal-- 455
Stover Apiaries ---- 428
Victor Aparies ---- 455
Weaver Apiaries ---- 457
Western Canada Beekeeper ---- 455
Woodman Co., A. G. ---- 462
York Bee Co. ---- 462

BETTER BEES + BETTER SERVICE = BETTER RESULTS

Is Our Aim At All Times *Featuring Good Queens Now*

Wire Us Your Orders If You Are In a Hurry

Prices CAUCASIAN ITALIAN QUEENS

1- 24 ..... $ .60 each
25- 99 ..... .55 each
100-499 ..... .50 each

Postpaid by Regular or Air Mail
Clipped at No Extra Cost

THE STOVER APIARIES : Mayhew, Miss.

GARON'S PROGENY TEST QUEENS

Also Daughters of stock bred for resistance to A. F. B. Clipped or by air mail at no extra cost. Prices for both strains—

1-10, 50c; 11-25, 45c; 26 up, 40c

Keep currently supplied with our Quality Queens. We produce them until late Fall

GARON BEE COMPANY, Donaldsonville, Louisiana

TELEPHONE 8614 TELEGRAPH WESTERN UNION

BOOKS ABOUT BEES

With the coming of the fall months our thoughts turn to winter and the greatest of all holidays of the year, CHRSTMAS. It is not too early to plan for Christmas shopping, and what gift would your beekeeping friend or relative cherish more than a new bee book?

LES ENEMIES DES ABEILLES by C. Toumanoff (in French). Complete treatise on enemies of bees. Paper. 178 pages. $3.00.

QUEENDOM OF THE HONEYBEE by P. C. and C. V. Lance. As its name implies, recent book on honeybees, their habits and handling. Cloth. 105 pages. $1.00.

THE FLOWER AND THE BEE by John H. Lovell. Finely illustrated, cloth bound, 280 page book, showing inter-relation of bees and flowers, with considerable discussion of pollination. Price $1.00 while the supply lasts.

PIONEERS IN IOWA HORTICULTURE by Kent Pellett. This book although written especially for the Iowa State Horticultural Society contains two chapters of interest to beekeeping. One is the life of Elisha Gallup, the beekeeper's friend, and the other the life of Eugene Secor, also a beekeeper. Cloth bound, 68 pages, price $1.00.

L'APICULTURE INTENSIVE ET L'ELEVAGE DES REINES by Perret-Maisonneuve. In French. 733 pages. Price $2.50.

THE LIFE OF LANGSTROTH by Florence Naile. This is the life history of L. L. Langstroth, America's master of bee culture, and is a book every beekeeper should have in his library. Cloth bound, 215 pages, price $2.00.

HISTORY OF AMERICAN BEE-KEEPING by Frank C. Pellett. The fascinating story of the beginning and growth of America's honey industry. $2.50.

THE GOLDEN THRONG by Edwin Way Teale. A popular presentation of the life of the bee colony, by the author of "Grassroot Jungles," with excellent photographs. $3.00.

THE BEE PEOPLE by Margaret Morley. The behavior of the bee colony told for children from 8 to 14 years of age. $2.00.

SWARMING—ITS CONTROL AND PREVENTION by L. E. Snelgrove. New and simple methods of swarm prevention, by the president of the Somerset Beekeepers Association (England). $1.00.

AMERICAN HONEY PLANTS by Frank C. Pellett. A knowledge of nectar-yielding plants is necessary to be able to locate apiaries advantageously. This is the most authoritative book on the subject of honey plants. Illustrations by the author. $3.00.

We will be glad to furnish a gift card to be included in book when mailing if desired. All books are postpaid. Send orders to

AMERICAN BEE JOURNAL : Hamilton, Illinois

GUEST EDITORIAL

A WORD TO THE WISE

JOHN W. HOLZBERLEIN, Jr.

As this is being written one thing strikes me as being regrettable. That is, that the beekeepers who need to know what is contained in articles like this seldom read them. There is little to be said to the beekeeper who attends the meetings of his state and national organizations. He reads his bee journals, he supports the Institute, he is abreast of the times.

1942 looks like the year we have been watching for. For the first time in several years the nation is awake to the value of honey. This may be the year for many of us to recoup the losses we have sustained for the past few years. But just because the price of honey has gone wild for a time is no sign that beekeepers should go wild also. Let us profit by the lessons learned during the last war. Let us look into some of these things.

First, let us keep sight of the fact that a booming market built on the use of honey as a substitute cannot last. As soon as sugar becomes plentiful again these new, sudden consumers of honey will go back to their first love and honey will be left at the church.

Second, let us not go too wild on prices. (Uncle Sam may make this warning unnecessary). The people who eat honey regularly, because they like it and know it is good for them, are the true friends of honey. Too high prices may offset the benefits we expect by forcing our regular honey-eating customers to cut down their consumption or themselves seek a substitute.

Third, let us not expand too rapidly. Too rapid expansion will cause a certain rise in production costs. So long as this increase is one that can be curtailed as soon as the emergency is over all is fine. But when it entails the purchase of much new equipment that would not ordinarily be used, employment of incompetent help and consequently poor methods of beekeeping, then it becomes dangerous. At no time should beekeeping operations be extended to the point where careful supervision by the owner or a trained man cannot be given. At no time should there be a let down on the vigilance for disease. And at no time should holdings be increased so as to take in poor territory or to infringe on the territorial rights of others.

Rather let us increase our production by better methods of beekeeping. Let us provide ample stores, not only for winter but for the spring build up period, both honey or its equivalent in sugar syrup, and pollen or a pollen supplement. Then follow up these processes with keen observations that colonies so built up may not become too crowded, but go into the honeyflow without overcrowding and wanting to swarm. By this kind of beekeeping extra pounds of honey may be obtained that are velvet in the pockets of the beekeeper. For this kind of beekeeping not only increases the number of pounds produced, but also lowers the cost of production. It not only helps us to produce the extra pounds of honey needed for the present emergency, but will better prepare us to meet the evil days that experience leads us to believe are to follow.

The mention of evil days should cause some alarm. Right now we can still look back and see some of those days. If the rosy future keeps its promise it is not likely that we shall be long able to do this, for with a couple of good years we are apt to believe that all years will be good. The Heavenly Father made the human memory of hard times short.

Right now is the time for us to resolve to be of help to our country, not only by increased production during the emergency, but to continue to be of value by coming out at the other end a more useful, better established industry than we have ever been in the past. Let us determine to use

(Please turn to page 449)

Honey Containers

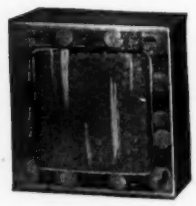
ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

All our tin containers are standard size. Glass containers are clear, include caps and put up in cartons suitable for reshipping. Write for prices on carlots, as we quote very low prices. If your order is for $50 at the prices shown, deduct 5%; if $100, deduct 10% in ordering tin and glass containers or both together. Style glass supplied will be what we can buy. Pails will be supplied with bails as long as stock lasts, after that without ears and bails. Glass styles and bails for pails regulated by WPB conservation orders beyond our control. Prices f.o.b. following points:

Cat. No.	Description	Watertown	Sioux City	Springfield	Lynchburg	Albany
66	5 lb. pails, 50 in ctn., wt. 27 lbs.	$3.20	$3.30	$3.25	$3.35	$3.40
69	10 lb. pails, 50 in ctn., wt. 45 lbs.	4.85	5.05	4.95	5.10	5.10
625	5 gal. cans, 16 in ctn., wt. 54 lbs.*	5.49	5.70	5.56	5.67	5.71
630	½ lb. jars, 24 in ctn., wt. 12 lbs.	.72	.78	.72	.68	.74
631	1 lb. jars, 24 in ctn., wt. 17 lbs.	.92	1.04	.92	1.00	1.01
632	2 lb. jars, 12 in ctn., wt. 14 lbs.	.60	.69	.60	.65	.67
633	3 lb. jars, 12 in ctn., wt. 18 lbs.	.65	.72	.67	.67	.67
635	5 lb. r'd glass pails, 6 in ctn., 11 lbs.	.52	.59	.52	.56	.57

Jars in ½ and 3 lb. sizes subject to stock available due to WPB simplification of sizes

***Can only be shipped 16/c. Write for bulk prices to Sioux City and Springfield only.**



WINDOW CARTONS

These pink and green cartons with large cellophane window help sell section honey. We also supply comb honey shipping cases and cartons for shipping extracted honey too.

644—4¼"x1⅞" Beeway
645—4¼"x1½" No Beeway
646—4"x5"x1⅜" No Beeway

100, $1.00; 500, $4.50
1,000, $8.75

Weight 6½ lbs. per 100; 55 lbs. per 1,000. All postage extra.

HONEY SERVERS

No Drip servers hold a pound of honey and make an attractive sales item. Colored handle, clear glass, trigger control. Much lower price 12/c f. o. b. factory. Write for quantity prices, subject to stock. No. 628 No Drip Honey Servers, weight 1 lb. postage extra. Each 40c.

REVELATION COMB HONEY WRAPPERS

		100	500
649	Colored 4¼, Blue and White	$ .90	$3.95
664	Plain 4¼	.60	2.70
658	Colored Bag 4¼	1.05	4.35
430	Bag filler device, weight 2 lbs.		.50

Above postage extra. Weight, 100—1 lb.; 500—5 lbs.
Write Lynchburg for prices on all cellophane plain wrappers.

Ask for our general catalog too if you wish other items.

G. B. LEWIS COMPANY : : : Watertown, Wisconsin

BRANCHES: COLONIE & MONTGOMERY STS., ALBANY, N. Y., 1117 JEFFERSON ST., LYNCHBURG, VIRGINIA; 118 SO. LIMESTONE ST., SPRINGFIELD, OHIO; 214 PEARL ST., SIOUX CITY, IOWA

SEND YOUR ORDER TO OUR OFFICE NEAREST TO YOU

THIS FELLOW WEBB

Addison Webb's slogan "Let the Bees—Wax the Way to Victory" promises well. Who is Addison Webb? Let him tell you.

On one of my first Sundays in church the minister took "Bees" as the text of his sermon. That was my introduction to a phase of life I later followed with much enjoyment.

What a scorn he seemed to have for the misguided parishioners who did not emulate the Busy Bee. He cried out against them in a voice of thunder, till I was ashamed for The Drones in the congregation. When he concluded the silence was awe-inspiring.

What the minister had to say that day I have never since seen in any of the Home Study courses: not one of them has ever had any information for me on the beauty in the soul of a bee.

Apiculture is now my avocation. By profession I am a lawyer. My wife says I ought to mention here that my office address is One Wall Street, New York City; but I will say nothing of that at this time.

As I said, apiculture is my hobby. "All work and no play," you know, is not conducive to the best in man. If you read Edwin Way Teale's "Byways to Adventure" you will see what I mean.

I couldn't take to drink as a hobby because personally I detest liquor. I am not even broad-minded enough to understand what other people see in getting drunk. I couldn't go in for card games, because they bore me; and besides, a room full of smoke disagrees with me as violently as liquor.

So I took to beekeeping as a pastime. I like tasty honey.

Yes, I also write stories. That is another hobby. I am now polishing my Randolf the Drone; and perhaps soon some publisher will have it for sale in book form. Randy has the objectionable habit of staying out nights with the fireflies and moths. Mother Queen's remonstrances have no effect on him. One day he gets on a rainbow, but is stopped on his excursion by a Guardian Fairy. She detours him onto The Road of One-More-Chance. I shouldn't tell you too much of the story. But he ends up with a beautiful queen of his own, and he stays home nights, and has many children, and lives happily ever after.

I write in my leisure time because I have no interest in the alternative of cafe society or cards. You ask whether my wife complains about staying home nights? Well, she got interested in baking. She can do the finest muffins and biscuits. And what corn bread! I've already ordered several medals for her. If you accept my vote on it, she will get the county prize. I mean the country's prize. I'll put her cornbread up against the best in the land, and put odds on it.

And some day we will find a beekeeper who has a little extra real raspberry honey; and then we will have cornbread with raspberry honey. That will be lots of fun.

HONEY PRICES

On the date that this is written, no action has been taken officially by the OPA to remove extracted honey from the "processed product" and "non-agricultural" class. As yet OPA has not issued a general price ceiling for extracted honey. This means that extracted honey is still subject to the OPA "price freeze order" as previously published in this Journal on page 344, August issue.

Information indicates that very soon there will be some relief from the "price freeze order" and that it will come in the form of a ceiling carrying a price at beekeeper's levels, contrary to early OPA plans, figured on the basis of "parity prices." Thus the ceiling price should be somewhere in the vicinity of 11.4 cents per pound. No one knows, of course, just what will happen, but certainly the honey industry should be relieved from the present impossible situation which causes such a disparity in prices between one producer and another, one packer and another, and also between many retailers who bought and sold honey at high and low prices during the month of March. These columns will, of course, contain the information whenever it is available and authoritative.

Recently the beekeepers of Kansas sent the following telegram to the War Production Board: "Beekeepers in Kansas are just recovering from the droughts of 1934 through 1938

and low honey prices of 1935 through 1940. With a half crop this season and the confusion of honey prices through action of OPA many beekeepers are discouraged. More colonies are needed in this state for benefit to agriculture. The drought and low income years have reduced the colony population of this state 65 per cent from which there has been only a slow recovery. Action needed by OPA to smooth price structure for orderly marketing of this natural agricultural product and encouragement to beekeeping industry."

♦

THE BEESWAX SITUATION

At this writing there is no sign of the long-hoped-for relief in the beeswax situation through official action of the Office of Price Administrator. Importers report that replenishment of present stocks of beeswax is virtually impossible if they are compelled to sell under General Maximum Price Regulation. According to the Oil Paint and Drug Reporter of September 7, 1942, sellers are marking time while OPA continues its investigation of the warrantability of raising prices to a basis which would end sales of goods to arrive at prices involving losses to sellers. Another source informs us that as yet no license to import beeswax has been issued. Our interpretation of this information is that for a period of several months no new arrangement for the purchase of imported beeswax has been possible. Import figures which are available indicate that very little beeswax is being imported.

With a short domestic crop of beeswax and with the present situation of the foreign beeswax market, the beeswax situation is more serious than ever before.

Many think that a change should be made in the Office of Price Administration classification of beeswax as a "processed" and "non-agricultural" product. Beeswax is no more a "processed" product than cream as it comes from the separator or alfalfa hay that has been baled. We could say this about extracted honey, too. It is in no sense a "Processed" food, yet it is being so considered. Honey, beeswax, and the agricultural products mentioned are all natural agricultural products put into a form to permit them to be marketed.

Beekeepers have not been sympathetic to this classification or definition. They are anxious and willing to cooperate with the government and its various agencies but they do object to this classification.

Let the Bees

Wax the Way to Victory

HONEY PRICE CEILINGS

This office has had quite a few communications relative to the establishment of price ceilings on honey and a demand from some that a lower price ceiling be established for the amber honeys than for the white.

It is a foregone conclusion from past experience that white honey in many markets does command a higher price than the amber honeys. However, there are amber honeys of very fine flavor and there are also localities in which amber honeys command as good a price as the white. It would be pretty hard for the OPA or for anybody else to determine just where the line should be in classifying honeys as to quality based on color.

It is our opinion, therefore, that in setting a price ceiling on honey, it would be a good plan for the OPA to set **ONE PRICE CEILING ONLY.** This would, in our opinion, simplify the OPA order and the darker honeys would automatically take their rightful place on the market according to supply and demand. It would also give the beekeeper who produces only amber honey and who has a good market for it, the opportunity of getting a maximum price for his product.

BEEKEEPERS LEAVE FOR WAR

In the "Illinois Association Bulletin" for July and August, space is given to the discussion of the beekeeper who is drafted and compelled to leave for service in the armed forces. We quote:

"With the available man power subject to conscription being rapidly depleted, we find that it is affecting the production of honey no little bit. Reports have come to this office of many, upon being called, who have killed their bees, rendered up the combs and marketed the beeswax. Your secretary has talked with one fellow operating 280 colonies who contemplates doing that very thing. He says that is all that he knows to do with his bees. It seems that in many cases no preference is shown commercial beekeepers regardless of the amount of honey produced."

This is quite true. Beekeepers must do their share, of course. In New Zealand, the beekeeper is in the armed service too, but there he is relieved of duty in summer to produce a crop and returns to duty in winter when the bees are put away. Here, it would be difficult to do this, but it is an ideal situation.

♦

FRONT LINE FARMER

What It's Like To Farm While the Bombs Are Dropping

S. O. Ratcliff, whose farm is 300 yards from an East Coast seaport in England says, "It's in the air we get our chief entertainment. During the earlier daylight raids and the Battle of Britain it used to be wonderful to watch those dog-fights. It always seemed to be a few attacking many, yet always the results were the same; formations of the enemy breaking up, one or two crashing to earth, machine guns popping off all over the place.

"While it went on, we just carried on with our farm work. One day we were carting barley to the rick-yard, with three men on the stack and one unpitching from the wagon. A great battle was going on. The air was full of planes. But the men never stopped work, although they would keep an eye over their shoulder for what was going on. 'Here comes another down,' one would say. 'That's

two! There's a third!' But all the time unpitching the sheaves of corn.

"Just at first we used to take cover, but we soon gave that up. We don't bother much about shelters on the farms, and I have never been in one. But one night there was a real pandemonium, with heavy bombs coming down not far away. I began to get out of bed and did get downstairs. But then a second bomb sent my front door flying, the windows crashing and threw me back on to the couch. That was enough. Off I went upstairs and have not come down for any bombing since. Once a bomb fell in the field next to my farm yard, at about 11 o'clock when I was getting into bed. Once again in came the windows, black-out and all, away went the bed, down came the ceiling. There was glass all over the bedroom floor.

"My wife said, 'Aren't you going to see if the place is on fire?' and I replied, 'Yes, if you'll tell me how to reach my slippers without cutting my feet.' There was no fire and in about a quarter of an hour we were sound asleep with plenty of fresh sea air. My house, like most English farmhouses, is made of brick and is very substantial. But in some ways I'm not sure that wooden houses are not better for this sort of thing. For when a bomb dropped beside a pair of timber cottages in one of my meadows, the roof came off, the brick chimney crashed into the living room, but the cottages just shook and stayed where they were. Neither family had a scratch.

"Sometimes I wished we weren't quite so near the enemy, for I think a lot of them think home is the safest place and just shovel out their bombs anywhere and get back as quickly as they can. Still, we don't mind a shaking house and pitted fields so long as they're not getting to the towns and factories. One night, when they were evidently very frightened, they unloaded about 250 incendiaries and 50 H. E.'s on and around one of the farms. Our men rushed about picking the fire sticks off the sheds and stacks. We estimated the damage was about one pound, and practically no one hurt. But it does get a bit lively now and again. My son is a bomber pilot and when he was home on his first leave for a much needed rest, we had pretty continuous bombing for a night or two. 'I say, Dad,' he said, 'I never knew bombing was like this.'

"The one chap on the farm I am really sorry for is the tractor driver. He can't hear the warning or the planes. He just has to keep on looking where he's going, and he gets no fun or excitement."

CAN YOU BEAT THIS?

The only two-man Labor-Management Production Drive Committee in the United States consisting of " . . . the old gent and myself" has won the recognition and flag it sought via the White House.

These two men of the combined age of 139 years comprise the entire war production plant at Bay City, Michigan, where they have been working quietly for 18 months, 15 hours a day, 7 days a week, and have made 18,000 stool flanges for war machinery.

Mr. Jake Sparling, 60-year-old head man of this tiny unit of America's giant production machinery, reported to President Roosevelt he handled the heaviest castings while his assistant, Percy Fogelsonger, 79 years old, kept production up to schedule handling the lighter castings.

As they were not of combatant age these soldiers of production said they "were very glad to be able to help in this defense work as it gets money to buy war bonds and stamps."

Mr. Sparling wrote to the White House to report what "the old gent and myself" were doing to win the war, and suggested they would like a pennant. The President referred the matter to Chairman Donald M. Nelson of the War Production Board. Mr. Nelson instructed they be sent a large American flag poster. He also authorized the two-man plant be fully recognized as a Labor-Management War Production Drive Committee to head the list of 1300 other War Production plants enrolled in the Drive, some of which have over 60,000 employees in multiple buildings covering miles.

Mr. Sparling, addressing the White House, wrote: "In the last 18 months we have turned out approximately 18,000 flanges. We work on an average of 15 hours per day, 7 days per week. There is only 2 men in the shop. I am 60 years old and my assistant is 79 years old. He handles all flanges from 12" down and I take them from 14" up to 30". We feel owing to our age, and the amount of work we are doing we are entitled to a pennant. I am enclosing two snap shots of the old gent and myself, and a truck load of the finished product that we got out from Friday night until Monday morning. Some of the castings weigh 365 pounds. We are very glad that we are able to help in this defense work. And it gives us money to buy bonds and stamps.

Very truly yours,
J. L. Sparling."

Chairman Nelson replied: "Your report on your war work is an example of what two free American workmen with initiative can do. Please accept my congratulations and also transmit them to Mr. Fogelsonger. I fear working the schedule you follow of 15 hours a day, 7 days a week is a little too strenuous for even younger workmen to maintain, even though you two gentlemen seem to thrive on it.

"I am instructing War Production Drive Headquarters to enter your name at the top of the lists of all plants formally enlisted in the War Production Drive in recognition of the example the entire working force of your plant is setting for the rest of the Nation.

"In recognition of your achievements I am having sent you the largest American flag poster surmounting the inscription "Give It Your Best." You have.

Sincerely yours,
Donald M. Nelson."

♦

MILKWEED GINNING

Organized to process milkweed floss into a product designed to replace scarce kapok and cork, the newly-formed Milkweed Products Development Corporation plans the construction of a plant at Petoskey, Michigan, according to a recent issue of Packaging Parade. A Chicago company is to build 10 milkweed ginning machines for the factory. President of the new organization claims that milkweed down is five to six times more buoyant than cork. This property makes it an excellent material for use in life jackets and as lining for flying suits. Use of milkweed floss will conserve cork for purposes for which suitable alternative materials have not yet been found.

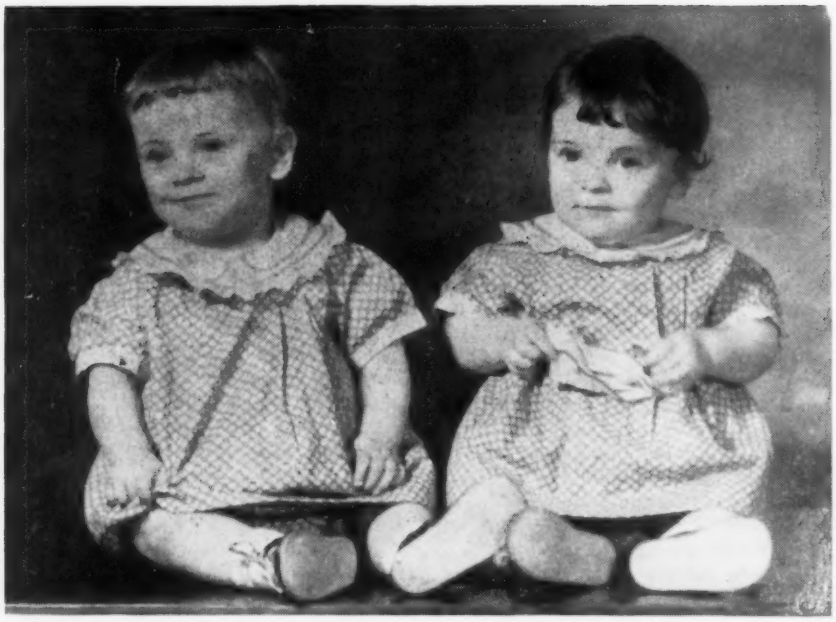
Milkweed is a fine honey plant. Any increase in acreage, therefore, is interesting to beekeepers.

♦

FIRE PREVENTION WEEK

The week of October 4 to 10 is set aside by the Office of Civilian Defense as Fire Prevention Week under presidential proclamation. In his proclamation, the President calls upon the nation for observance of this occasion as a part of the war effort. Fire is always serious, but now every loss of life, every interference with production, every loss of critical material delays victory. Fire Prevention Week affords a chance to impress people with the urgency of protecting our resources against destruction. Cooperate fully with your local agencies in the observance of Fire Prevention Week.

HONEY TWINS



Myra Vyra

These twin girls were born November 28, 1936. Myra weighed 4 pounds, Vyra weighed 4½ pounds. They lived on only milk and honey for the first eight months. This picture was taken when they were eight months old. Up to the present time we have not had to spend one cent for doctor bills on them, and they are still very fond of milk and honey. Of our six chidren these two were the most contented.

Gerald J. Wentz,
Wisconsin

[Mr. Wentz has been deputy state bee inspector in Sheboygan County for the past five years.]

—♦—

BEN, THE BEE MAN

Bernhard J. Schmidt, Ben to you, is a part-time beekeeper. He works in a factory five days a week in winter and six days a week in summer. In his spare time he raises bees. He feeds, puts on supers and extracts the honey from three hundred twenty-five hives of bees in a season. Usually, he has a boy help with the extracting. Ambitious? Well, I guess so. Wonder what he could do if he spent all his time on the bees? You guess.

M. Francis.

RUNNING OUTFIT SECURED BY ROSSMAN & LONG

Emerson Long

Rossman & Long, of Moultrie, Georgia, have acquired the Running Apiaries, Filion, Michigan. Emerson Long and J. G. Rossman have been in business for years in package bees and queens.

Many years ago we met a young boy at a field meeting in Wisconsin where it was our pleasure to address those interested in a practical beekeeping discussion. We never knew until years later that in the audience was Emerson Long and from this talk he determined to become a beekeeper.

Years later in Ohio he told us that his determination started from that day. We are sure that Rossman & Long will continue the Running venture with every degree of success. More power to you boys!

♦

APIARIES DAMAGED BY SPRAYING

The leaf worms have again hit the cotton in this section and it is being dusted with calcium arsenate by plane. Full extent of damage has not yet been ascertained but we expect some apiaries to be completely destroyed.

Roswell Seed Co.,
New Mexico.

FEATURES

—Photo by A. H. Bowen, England

AN ENGLISH BEE GARDEN

SHALL WE WINTER THE BEES?

By G. H. CALE

YEARS ago there was only one answer to this question. Bees must be wintered in the best way possible to avoid all loss. It was hard to get bees. Increase was made only from bees on hand or by the purchase of colonies of bees from others who had them for sale.

Now a large scale package bee industry makes it possible to replace losses from any cause. Many have looked upon this as a chance to get rid of all management early in the season, disposing of the bees before winter starts and filling the equipment again with packages when spring begins. Some claim it to be a success, others use it partially and still others have little use for it.

Probably the correct answer is in between. We have tried all methods. Some of our locations are in the far north along the Canadian line. Some are in Iowa, others in Illinois. Early experience in the North gave us the opinion that we could not winter bees there successfully. It just got too cold. There was too much wind. In fact, wintering colonies when in exposed places as they were in the fall almost proved this true. In sheltered belts, the story was different. Wintering was often successful.

With more experience, it became evident that heavy packing in itself does not insure good wintering. Some losses were great even when the bees were packed in straw and paper, and buried under the snow. In some winters the loss was small with bees not packed at all. Surely something must be in this picture about which we do not have sufficient information.

Again we take our hats off to Dr. Farrar, of the University of Wisconsin, for his claim that the condition of bees has more to do with successful wintering than packing, protection, or shelter. He is certainly right. In the North country, it takes powerful colonies of bees with an abundance of stores and pollen, and reasonable protection from exposure. In our experience colonies in perfect condition in these respects winter well most years, regardless of the cold or the snow.

However, we have long ago given up trying to winter poor colonies. We get rid of all those colonies that are inferior; colonies with poor queens or small clusters; colonies with old bees; colonies short of stores. All of these can be taken out of the picture. They may be united or they may be killed. Suit yourself.

In the North, we have found it to be a decided advantage in wintering to shake the bees of the colonies to be removed in front of those to be wintered. The two lots unite during the early fall when there is no brood without much confusion or fighting. These extra heavy colonies winter best. The only protection we have given them is a wrap of tar paper and a top or middle entrance with the bottom entrance closed tightly. They winter better, of course, with some shelter, like a belt of trees or a protecting hedge, or even a snow fence, although some yards have come through well that have been right out in the sweep of the wind.

Commenting further on killing bees, we don't like it but often it is necessary. We find calcium cyanide the most effective killing agent. The equivalent of a couple of tablespoonfuls at the hive entrance without any attempt to close up the hive or stop flight will kill the bees in a short time. We usually put the powdered or granulated chemical in the entrance from the end of a hive tool. Two dips of the chemical on the end of the tool will kill any colony, big or little.

Then, if the combs are to be stored, the bees must be removed or the combs will mold. Also if bees are killed before the brood has all emerged, the combs will mold. These moldy combs are destroyed or badly damaged by the bees when in use again. Store the combs in a dry place, never in a damp basement. They will mold there also.

Foulbrood colonies, of course, are killed as found, the wax rendered up at once and the bees buried.

It is so easy, however, to unite colonies as described previously, that we do not try to kill the bees unless it is absolutely necessary. In the North, we find the removal of colonies usually leaves us anywhere from half to a third of the bees for winter. The honey is extracted down to the brood nest. We do not try to extract the brood combs themselves, leaving that honey for next year's packages. It will save feeding.

Colonies to be wintered are left with a super of honey solidly full. We often winter with two hive bodies and a super. These big colonies come through very successfully, build up rapidly in spring, often getting supers of honey from early dandelion; some store two or three supers.

When the packages arrive in spring they are hived in the empty equipment on those nice combs of pollen and honey from the fall before and are allowed to grow until they have been in the hives two or three weeks. Then a comb of brood can be added to each package from the overwintered colonies, taking two or three combs from each colony. This will prevent later swarming of the big colonies and at the same time give the packages a great big boost. You will find little difference in the production of the main crop from the two lots when they are treated this way. The big thing in all this is to make sure that your queens are the finest you can get.

Illinois.

HOW ABOUT YOUR TRUCK

A. E. Friedgen, Consultant on Delivery Problems, in a recent bakery magazine comments about the abuse of trucks and brings out certain points which we should all remember.

Years ago, tire makers spent sizable fortunes to show tire users wasted more miles than they obtained from their tires. Truck makers did the same for prolonging the life of engines; gasoline producers for getting greater mileage per gallon; transportation experts preached against profligate mileage, but in vain.

Now new trucks are out, tires are scarce, gasoline is rationed and mileage is restricted. You may have to go to the bitter end with the trucks you now have. It becomes a case of efficiency or else.

Go into your garage and personally check the inflation of your tires. Use a gauge and use it often. If you fail to have your tires inspected frequently for cuts and bruises, spot wear, bent rims, etc., you are guilty of neglect. Neglected cuts and bruises can lead to blowouts. Avoid curb cuts, do not speed over tracks or rough roads and ruts. Do not stop and start quickly, slam on brakes and whiz around corners. Keep the wheels lined up. Do not permit faulty brakes, loose steering control, loose lugs, leaky tire valves. Dollars won't replace tire mileage, so don't waste it.

A SNOW FENCE

Here are two pictures of a snow fence, one from Edwin Goff, of Blissfield, Michigan, which shows a fence with tree limbs to make a windbreak. Where wind swept places only are available, an artificial device like this helps a great deal in protecting the bees against constant winds. The other picture shows a more tightly constructed fence. Both fences have spaces, of course, between the fence rails. An absolutely tight fence often precipitates the wind on the hives rather than breaking it, so that the bees are really not protected at all.

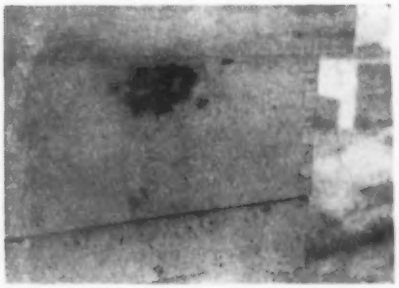
—♦—

MIGRATORY BEEKEEPING IN SPAIN

Beekeepers in the Valencia area of Spain are being urged to adopt the American system of moving hives from one part of the country to another to take advantage of the seasonal blooming of flowers. Owing to the current sugar shortage, honey culture is becoming increasingly important in Spain. Honey which normally sells at 5 cents per pound in Spain now costs nearly $1.00.

(From Farm Letter, United States Department of Agriculture, Office of Information, Washington, D. C., July 25, 1942.)

A TOP OR MIDDLE ENTRANCE



These two pictures were sent by Edwin Goff of Blissfield, Michigan, one showing a top entrance, the other a middle entrance. In both colonies, the bottom entrance is closed entirely. In our own apiaries, we have used a middle or top entrance for eight years and would not go back in winter to the open bottom entrance. Our winter losses have been reduced materially in all locations adopting this plan. It is questionable whether in many parts of Illinois and Iowa, where our bees are located, any more protection is necessary except in exposed locations where there is no natural shelter. Then our only protection has been to wrap the colonies in a heavy tar paper.

♦

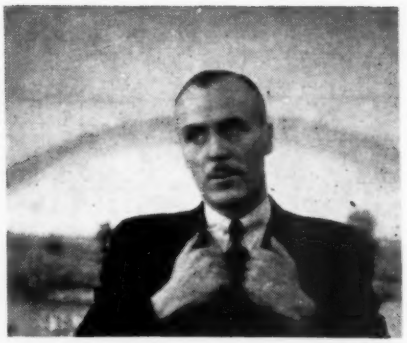
HONEY FOR HAY FEVER

I had a lady at my home from Chicago who bought a large order of honey to be used for sweetening all food in her home during the hay fever season.

Mrs. Fred Doner,
Illinois.

THE FINGER LAKE HONEY PRODUCERS' COOPERATIVE

By E. J. DYCE



THE Finger Lakes Honey Producers' Cooperative, Inc., Groton, New York, was formed in 1939 by a few of the "conservative Yankee" beekeepers of central New York, so that it is no fly-by-night affair. They believed after years of experience in selling honey that if honey production is to become a stabilized industry, the control of the honey market must be assumed by producers themselves. Since no individual producer, however large, can accomplish this alone, they came to the conclusion that the best way to improve honey prices is by a firm adherence to the principles of cooperation, and that the best way to put honey on the market is by the use of methods which have proved good. The organization was incorporated under the cooperation laws of the state, and has recently closed a successful year of large-scale operations.

Sufficient stock was purchased by members to equip a modern packing plant, and Groton was selected for its location because of low taxes, available temporary labor, good shipping facilities, and available, soundly constructed building, and, highly important, an artesian well of large capacity within the building. The water from this well flows throughout the year at a temperature of 47 degrees Fahrenheit, making it possible to cool honey quickly at virtually no cost, so that its flavor is not damaged.

The directors are close buyers, and have equipped the plant at an outlay of only $7,000. This is remarkable, as is indicated by the fact that one tank alone, when new, costs over $10,000. Ten tanks lined with glass or heavily tinned copper, range in size from one hundred to five hundred gallons. The larger tanks are of course too large to use as heating tanks for honey, and are used for other purposes. The capacity of the plant is several million pounds annually, and no new equipment need be bought for several years, which is extremely fortunate in times like these.

Much has already been learned about the best ways to handle honey, and as might be expected much of the so-called information about the best methods for such work has been found faulty and sometimes detrimental. In the Groton plant, no chances are ever taken, and so far no honey has ever been returned from purchasers because of damage claims, and no customers have been lost from the sale of inferior or damaged honey, which is some sort of a record.

The operation of the Cooperative is patterned as closely as possible after cooperatives along other lines that have proved successful, and unworkable policies which have led to the wrecking of some cooperatives have been carefully avoided. The members and officers have not assumed that they know more about the management of a cooperative society than do men who have spent years in such work with success. Many long hours have been spent in studying methods of operation, for such an organization is not lightly to be set up.

The Cooperative has progressed beyond the first expectations of its members and most of the credit is due to the unceasing efforts of Brown and Archie Coggshall, sons of W. L. Coggshall, a well-known pioneer in commercial beekeeping. There are now twenty-eight members and the organization handled between one and a quarter and one and one-half million pounds of the 1941 crop. Owing mainly to the lack of adequate bonded warehouse space, the Cooperative was forced temporarily to turn down the applications for membership of several producers. This situation has now been remedied by the recent purchase of an adjacent building, sixty by one hundred and fifty feet. The lower floor will be used as a bonded warehouse, and the upper floor for storing containers and other supplies.

While some liquid honey is packed on special order, the Cooperative has featured processed, finely regranulated honey. The results have been most gratifying. Many people who claim that they do not like honey have become regular consumers and sales each month have steadily increased. From two to three cents more per pound are secured for finely recrystallized honey than for liquid honey, and this helps materially in making a better return to the members. Exclusive rights to pack regranulated honey in several eastern states were secured from the Cornell Research Foundation, which controls the patent. The unwise and detrimental practices common in honey packing are avoided and honey is improved and not injured. The hazards of marketing ordinary granulated honey are entirely avoided by a proper use of this process. It would scarcely have been the part of wisdom merely to enter the market for liquid honey in competition with established packers, but by the use of processing of minutely fine recrystallized honey, the Cooperative has been relieved of cut-throat competition. Returns to the members have been higher than anticipated, and higher than those of non-members of the area, except for a few who gambled on honey prices and luckily sold out on the wildcat market late last winter, which is obviously unwise and unsafe. Perhaps the returns had best not be announced, to avoid a rush of applicants for membership, but the Cooperative is operating under a favorable price ceiling, and can get its ceiling price.

One of the most attractive features of the Cooperative is its bonded warehouse. As soon as members deliver honey to the warehouse, an immediate advance of about half the market price is made to them. This puts a stop to distress sales, which are so often used as the excuse for the slashing of honey prices during the period of early sales. Special cooperative banks have been set up by the federal government for the purpose of helping cooperatives provide ready cash to members. The present rate of interest is one and one-half per cent.

While members are encouraged to send their honey to the Cooperative, they are not required to turn in all of it. In fact they are advised to foster local sales, if any members happen to have facilities to put up honey without ruining it, as so many beekeepers do. At the end of the clover and of the buckwheat honeyflows, each member reports the amount and grade of honey that he plans to sell through the cooperative. This enables the management to determine the size and quality of the crop at the earliest possible date, which is necessary in order to market the crop to the best advantage. Members receive payment for their honey in three or four installments, the amount and time of payments being governed by the rate at which honey is sold.

The crop is gradually sold throughout the twelve months of the year, and an effort is made to sell approximately one-twelfth of the entire crop each month. The allotted amount of honey not sold in any one period in the retail pack is sold in bulk to dealers and manufacturers at the best market price, but the selling of honey as it comes from the producer is be-

ing discontinued as rapidly as possible. Because the Cooperative can sell on exact grades, quality, and water content, and because it can guarantee that its honey will not ferment, no difficulty is experienced in marketing at prices determined by the Cooperative in the face of any competition and the market remains a seller's market. Selling the crop throughout the year lessens the danger of serious loss due to a sporadic market and takes the element of gambling out of cooperative merchandising, which was especially important for the 1941 crop. No one is qualified to foretell now or at any other time what may happen to the honey market, and if a beekeeper prefers to gamble on honey prices, he should not join a cooperative.

The directors and members of the Finger Lakes Honey Producers' Cooperative are progressive and fair-minded. Beekeepers large or small are extended a cordial invitation to look through the plant. Several improvements in the packing of honey and the handling of containers have been installed, which are worth observing. Beekeepers from any state who are interested in forming a cooperative, will be given all the help possible. The directors are sure that the merchandising of honey will not be fully successful until there is an efficient cooperative in every major honey producing area from coast to coast.

An interesting sideline and much needed benefit that has come to members is the improvement in their methods of handling honey in their honey houses. Since members can readily observe in the plant the elaborate plans necessary to avoid damage to honey from heating it while wax particles and other foreign materials remain in it, they have come to appreciate the necessity of straining honey just as it is extracted, by methods far better than are ordinarily used. The benefits of keeping combs in a warm place prior to extraction are appreciated, as are other modern and effective procedures neglected by many producers. The result has already been considerable remodeling of honey houses and improvement in extracting methods, which at a guess has been greater in a couple of years than probably would have occurred in a decade without the Cooperative. Because many have discovered the damage to honey from the use of the capping melter, this equipment is on the way out; and some interesting experiments are being tried on the removal of honey from cappings.

[Commenting on wax melters, we have adopted the Brand melter. It seems to be free from the objections raised by Dr. Dyce. Properly used, the honey is scarcely discolored and its flavor and body are not injured.—Ed.]

A GOOD PACKING CASE

This packing case is made of panel Celotex, cut the right size, covered with tar paint and held around the hive with heavy cord. They are kept water tight at the corners with a folded metal strip, painted with aluminum paint. The cover down over all keeps the water out at the top. A tar paper strip at the bottom folded up around the hive sides or left flat on the ground, as in the picture, completes the packing.

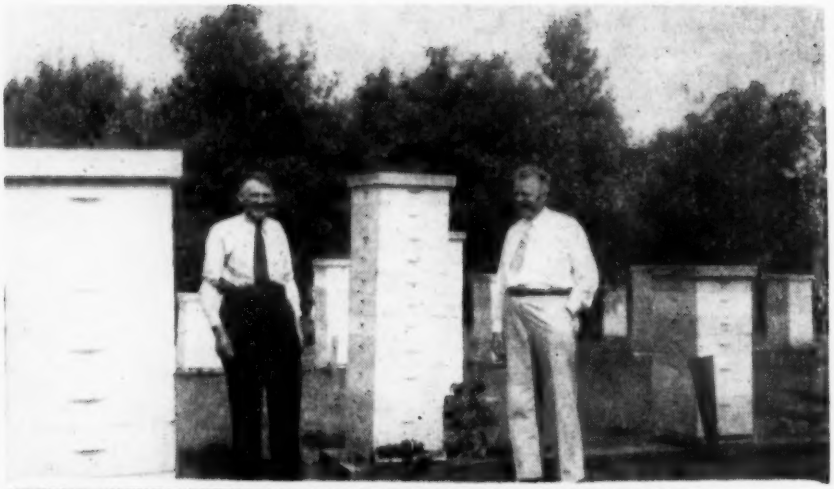
Sometimes straw, crushed paper or a felt pad are placed under the lid. We prefer to use the top entrance and the tightly closed summer entrance. When spring comes, the closing strip is used with the notch (shown in the picture) down to make a reduced entrance. Later the strip is removed entirely. The top entrances are never closed winter or summer.

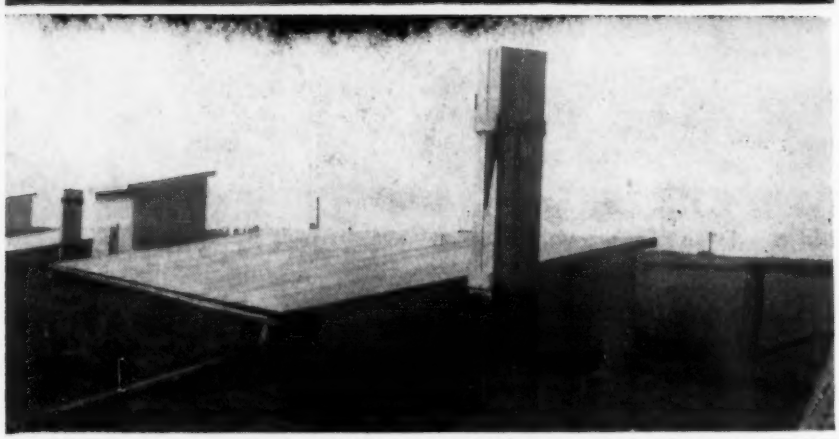
—♦—

OCTOBER IS DONUT MONTH

The stage is set for the 14th annual Donut Month this October. Born "under fire" in World War I, the donut has gone to war again! Men in the armed forces have shown an overwhelming preference for donuts which has set the pace on the home front, too. The spotlight of the nation this month is on Donuts—a "natural" as a wartime food. Plans have been made for the most widely publicized activity ever.

Beekeepers can get in on this too by selling their local baker on the idea of a honey glazed donut or a donut dough sweetened with honey. Information about it can be obtained from American Honey Institute. Madison, Wisconsin.





A NORTH DAKOTA BEE CELLAR

Many still prefer cellar wintering to outdoor wintering. These pictures show cellar built by E. H. A. Fischer, Grand Forks, North Dakota. That the bees do well the next year is indicated by the picture of Mr. Fischer (left) and Mr. Overbey (right) in the Fischer yard during the honeyflow.

No. 2 shows the complete cellar with the entry way at the left, the ventilator at the back and the earth bank up along the building. Oftentimes an opening between the cellar roof and the cellar ceiling is filled with some kind of protecting material to keep the cellar below the influence of the frost. No. 3 shows the ventilator and No. 4 a cellar with entry way and ventilator and drainage for water, regular eave trough with down pipes like a house or other building.

The cellar must be of an even temperature and fairly dry. Bees are put away after the last flight in the fall and taken out the first flight day in the spring. As the winter progresses, the cellar temperature must be lowered some to keep the bees quiet whenever they show disturbance. Some provision for controlling the temperature is necessary. One cellar we have seen, that of E. L. Hoffman, of Janesville, Wisconsin had an automatic control on the ventilator, so the cellar temperature could be kept at any desired point during the entire winter period.

The bees in the cellar winter well when conditions are right with the least consumption of stores and with the least loss of bees, but the cellar does require attention and must be made carefully. Outdoor wintered bees require little attention although they consume more and the loss of bee life is greater.

NEBRASKA BEEKEEPERS FORTUNATE

An old-fashioned rain fell over Central Nebraska the 2d and 3d of September, three and one-half inches here, and elsewhere as much as eleven and twelve inches. This gives us a fine start for 1943 . All colonies continue to roll in the nectar. On the 23d I placed four supers on a Modified Dadant hive colony and all were being capped on the 30th, so no rest for the beekeeper here. Our 1942 yield will be much larger than 1941.

Howard Wagner,
Nebraska.

PREPARATION OF BEES FOR WINTER

By CARL KILLION

THE preparation of bees for winter is neglected far more often than the preparation of bees for the honey crop, yet good wintering is just as essential to good crops as any other step in management. Too often bees are just ushered into the blasts of winter with nothing to protect them from these blasts except the well wishes of the beekeeper draped around them.

Preparation of bees for winter should be started early enough to allow plenty of time for this necessary preparation. How much time in days or weeks necessary for this preparation will depend on several factors including the beekeeper's ability. Most beekeepers agree that to insure favorable wintering there are at least four major requirements. First of these is having the colony headed by a good prolific queen. Second, having a good cluster of young bees. Third, having sufficient quantity of well ripened honey. Fourth, having adequate winter protection.

A good prolific queen is necessary to give us the second requirement of a good cluster of bees. These young bees must be reared late enough to possess all their reserve energy. Old worn-out bees that have used up all their energy are a liability instead of an asset to the beekeeper. Some years it is almost impossible to get this required amount of young bees in the colony. The season of 1939 was one of those years. Bees refused to build up into anything like normal colonies. They went into winter with a very small amount of young bees within the hive. Although they appeared strong in late fall the hives contained a large percentage of old bees. Late feeding failed to increase the amount of brood.

The year 1939 was a very abnormal year for central Illinois. The season seemed to be in reverse, dry weather when there should have been rain, and rain when sunshine was needed. The fall flow was the poorest in beekeeping history. It could be safely estimated that colonies did not gather an average of two pounds each. The clover flow was below normal and there was very little swarming. As a result many colonies were not requeened. This meant many colonies had queens beyond their full productive age. These facts coupled with the absence of fall flow left thousands of colonies in central Illinois in poor shape for that winter. Since the price of honey was so very low most beekeepers could not and did not feed their bees. Small clusters of bees, little or no honey, or poor honey in addition to a tough winter netted disastrous results. After such a poor crop and such low prices, beekeepers failed to take even a small precaution against the rigors of winter. Conditions differed in the fall of 1940. A good clover flow, young queens, another good late flow, and better honey prices gave the beekeeper some enthusiasm toward better beekeeping.

After summing up most of the foregoing, it appears that much of the preparation of bees for winter depends upon weather and floral conditions. Such is the truth in most cases.

During most years the fall flows have been taken in sections. The writer has found that although there are markets for this kind of honey that the outlets are limited. We are beginning to use either extracting supers or bodies to get this flow. This does not crowd the queen so much in her egg laying and the result is a larger amount of brood. This may cause the amount of honey stored in the brood chamber to be much less and may necessitate the adding of an additional body of honey for winter stores. The extra amount of brood pays greater dividends than if comb honey was taken.

In the location of apiaries winter protection is one of the items for consideration. If apiaries are located on the windswept flat prairieland bees cannot be wintered as successfully as if located in hilly or timber country. In selecting a new apiary site a suitable windbreak should be considered. Colonies in packing cases well packed to conserve heat do not withstand wintry blasts as well as colonies protected with a natural or artificial windbreak with equal protection in cases. It may be said that colonies unpacked with no protection other than their natural surroundings in a wooded or well shielded section will winter better than those on the wind swept prairies. Early inspection of bees in such locations shows proof of these statements.

Proper honey for wintering is very important. Most all will agree that the first requisite is having well ripened honey. This is a very good plan to follow on all honey except heartsease. My own personal experience has been just a little contrary to this. For example, I would prefer to have a colony with all combs containing unsealed heartsease for winter than the same amount of sealed aster honey. Bees will winter far better on pure heartsease. Should the heartsease be mixed with Spanish needle and other late flowers the result may be different.

Since the wintering problem in Illinois or in this latitude is a very serious problem, this subject is very important. Any state that has a winter loss of well over 35 per cent (as this state had for the winter of 1939-1940) does have a wintering problem. Numerous individual losses of 75 to 95 per cent were reported. After beekeepers have had four or five mild winters with very small loss they forget they have ever had a wintering problem. Suddenly one of these "old-fashioned" winters comes along and again they are all talking protection and packing.

Winter protection and packing can be overdone and yet not be properly done. There are numerous ways of giving protection and packing to bees. Winter protection must give a two fold result—conserve temperature and eliminate excess moisture. The apiarist that can attain these from his method of protection and packing has solved his wintering problems. Beekeepers find that packing to conserve all possible heat and at the same time eliminate moisture is quite a problem. Holding the correct temperature prevents the escape of excess moisture. By allowing moisture to escape, heat also escapes and we are back where we started.

A good prolific queen was necessary to produce the adequate cluster of young worker bees. The older worker bees produced the honey necessary to carry the colony through the winter. Then it is up to the apiarist to provide the protection needed. If a natural windbreak cannot be had then an artificial one should be erected. Mr. W. H. Suhre, of Hoopeston, Illinois, has one of the best combination windbreaks the writer has seen.

This windbreak is built of six inch boards about 8 feet long and spaced about 3 inches apart. Above this fence can be seen the tops of a hedge growing to a height of 25 to 30 feet. This fence gives protection near the ground, the hedge breaks up the force at a higher altitude.

Illinois.

Yard run for increase.

TWO QUEENS BEFORE FLOW STARTS BUT NOT AFTER

By BEN M. KNUTSON

THREE general systems of expanding the number of laying queens and hence the brood prior to the honeyflow are as follows; making increase, forced supersedure, and the two queen colony procedure. The underlying principle is the same for each, namely, at the start of the honeyflow there are two queens, two brood nests where otherwise had the colony not been manipulated there would have been but one queen, and one brood nest.

If one brood nest with queen is left on top of another during the flow we have what is ordinarily termed a two queen colony. If the brood nests are separated and set side by side each with its own bottom the combination may also sometimes, be designated as a two queen colony. Usually as soon as a division is affected each part assumes a new identity.

Now, the initial step in developing a two queen colony is the common operation of establishing a nucleus on top of a relatively strong colony in early spring. The exact date depends on locality and type of spring. The second step is that of adding a virgin queen to this nuc. The virgin will soon mate and start laying. Fig. 1 shows a nuc. with queen in cage added. Fig. 11 shows a virgin queen being accepted by bees after she has been released from her cage. She rapidly expands the brood nest after mating and if timed nicely she will have possibly three frames of brood at the start of the main flow. Fig. III shows one frame from a good nuc not long before the start of the flow. If conditions are especially favorable the nuc may be a good deal stronger, though my experience has shown three frames to be a good condition and not always obtained. This nuc is, of course, separated from the parent colony below by a double screen divider. See fig. IV. I use an all purpose screen of my own design which carries a 3" x 4" opening in the middle overlaid on the bottom side with excluding metal. A 3" x 4" block can be dropped into this opening to cover the excluding metal and convert the device into a straight double screen divider. With the block out it can be used as an excluder. In some cases it can, also, be used for uniting and many other bee yard operations. Aside from hive tool and smoker I find it the most useful piece of equipment I have. Two frames of brood are sufficient to start a good nuc and are better than four or five because in the latter case, mating of the virgins is very uncertain. If the nuc is just strong enough to maintain itself results are much better than when it is strong. Mating percentage will run much higher. The nuc receives heat from below and unless the weather is unusually cold there is no trouble from the nuc being chilled. If the nuc is formed from two frames of brood as suggested with adhering bees and the work is done when the field bees are out of the hive, the new queen can be introduced immediately in a candy "eat-out" cage. She will quickly be released and will within two weeks commence laying. If it is possible to introduce a young laying queen she will start laying immediately and from eight to fourteen days will be gained. However, in my case I use only virgins or ripe cells. The cells can be given immediately without protection. Thus my mating nucs are ready made and there is no handling of the queen. The entrance to this nuc must be small, indeed. On my screens I made it about 1½"x⅜" but wish it were ⅜"x⅜". This is stopped up with green leaves. These dry out and give the bees their liberty in a day or two.

The above description of forming a nuc is the initial phase in making a "two queen colony." It, also, is the initial phase in the "forced supersedure" method and should be the initial phase in "making increase". In other words prior to the main flow the three systems should be wholly and completely identical. Demands that apply to one method apply equally to the others. All the well-known requirements of honey, pollen, protection, good stock, etc., must for optimum results be satisfied equally in each case. If that is done without fear or favor the resulting two brood nest colonies must, at the start of the main flow, be the same regardless of what name the work carries.

When the honeyflow does start, however, we come to the third step of the methods and it is this operation which is different in each case and gives the commonly accepted names to the entire operations.

For making increase we set the young queen with her brood nest on a new stand and allow the parent colony to continue on as though nothing had happened. The increase will build up, store honey for winter, and possibly considerable surplus in a favorable season. The parent colony will be "none-the-worse" for having produced the increase and will possibly require close attention in

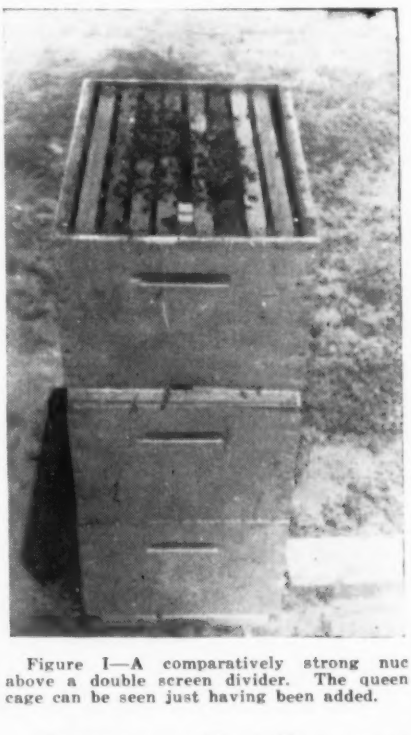


Figure I—A comparatively strong nuc above a double screen divider. The queen cage can be seen just having been added.

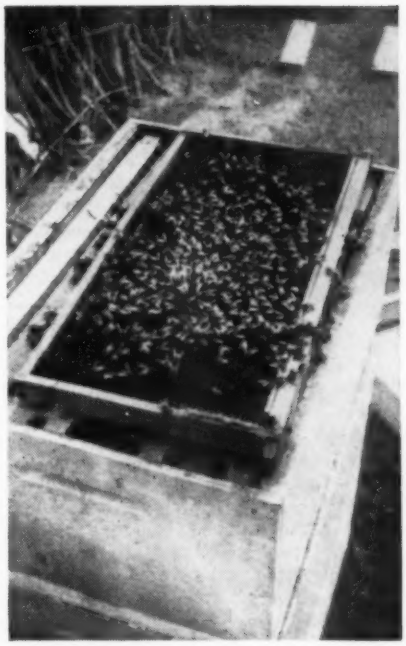


Figure II—This shows the bees accepting a virgin queen which had just been released from her cage.

a heavy flow to prevent the "swarming fever."

In the forced supersedure method the old queen below with her brood nest is removed to a new stand close to the old with entrance to the rear. The young queen from above is put down on the bottom board of the old stand to replace the old queen. If this is done during the flow she is not apt to be killed but if done too early she will be, in many cases. I find the bees very touchy on this point in this locality. Reports I receive from other sections indicate that many liberties are often taken in introducing and switching queens which would spell certain death to them here. However, if a good flow is in progress the young queen from above can be put down with comparative safety. Customarily the next step in this method is to hunt out the old queen on the new stand after the field bees have left and show appreciation of her past efforts by smashing her between thumb and forefinger then putting the brood back on the old stand. I depart from orthodox procedure and leave the old queen and brood on the new stand. She will soon show what she is worth. Frequently these queens are much too fine to kill, and are carried through to make excellent colonies the following season. The undesirable ones just dwindle on and can readily be picked out. These should be stacked up four or five to a pile. The bees kill all but one and as the brood hatches the supers are filled with honey. At the end of the flow the remaining queen can be hunted out and killed and the bees united with some weak colony, or if time is scarce the old queen can be carried through till the following spring, they usually do not play out completely until late in the spring and often are superseded early. I never hunt out a queen to kill her, somehow, I don't seem to have time for such an unpleasant task, unless, she is a drone layer then, of course, there is no alternative.

I find the above forced supersedure method the best for me under average conditions. It goes a long ways toward preventing swarming since the new young queen remains on the old stand. Removing the bottom brood nest is in a sense a swarm prevention measure. In the cases where this is returned, the colony is apt to become excessively strong and get crowded. At the time the division is made supers should be added to the old stand without stint and at least one standard or two shallows should be added to the new stand. These supers will come off later without brood since the queens are busy expanding in the brood nests and not in the supers.

Figure III—Average condition of the nuc above would consist of about three frames like the one shown at the start of the main honeyflow.

If it is desired to maintain two queens on the one stand through the flow, that is, use the two queen system, the double screen is removed. It is replaced with a queen excluder. Sometimes two excluders or other special precautions are needed to prevent the queens from reaching others. Further, this operation must be done only during a heavy flow otherwise one of the queens will turn up missing. Two queens in a colony is a condition contrary to nature and any slight mishap such as the flow shutting off unexpectedly for a few days will spell disaster to many queens if it occurs shortly after the double screen is removed. Always the young queen above should have three frames or more of brood. If she for instance is just starting to lay when the screen is removed she is almost certain to be gone the next trip. My advice in regard to removing the double screen is to try it on a few test colonies first to see how it works before running chances on tens or hundreds. I speak from bitter experience. Sometimes it is an aid if a sheet of paper is put in along with the excluder just as is done in uniting but this is no certain cure for the fact that the whole thing is contrary to nature. It is rather general practice to have one brood nest and queen at the very bottom and the other brood nest and queen at the very top with the supers between. The bees from below work up into the supers and bees from above work down. The bees show a strong tendency toward filling the upper brood nest with honey and it takes a regular super-duper queen to maintain a so-called clear brood nest. Incidentally the first super space above this upper brood nest, should one so desire, is the greatest place ever known to man for drawing out comb honey in a hurry. The super gets filled as if by magic. It seems that bees prefer to go up into supers. In their natural state the honey is always above the brood.

There is, I think, a rather vague belief held by some beekeepers that retaining two queens under one cover lends some mysterious element to the arrangement. A mystery whereby some of the desirable points of bee behavior are accentuated and some of the undesirable characteristics are inhibited. To be more def-

(Please turn to page 448)

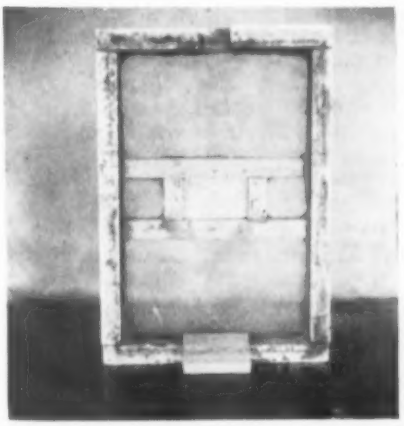


Figure IV—A general purpose combination dividing screen and queen excluder. When the block is dropped into the 3"x4" hole it covers the excluding metal and forms a double screen divider.

THE COLLOID CHEMISTRY OF SOILS

By E. L. SECHRIST

THE colloid chemistry of soils is a subject of immediate importance to the beekeeper—of that I am convinced. During my years of work with the Bee Culture Laboratory, in Washington, I visited a number of formerly good beekeeping regions, where much honey had been produced, but where beekeeping was no longer profitable because of the loss of bees through spraying orchards. I also saw the general deterioration of orchards, apparently through loss of fertility of soil. I felt that there must be some connection between these facts, but I could not see what it was.

Now, however, the development of colloid chemistry permits investigations such as were impossible 20 years ago, and we are beginning to have glimpses of an enlightened future.

Once, in one of the intermountain states, I was traveling at night with a beekeeper. We were returning to headquarters after midnight, following an all day trip. He was driving, and was continually dropping off to sleep. There was no real danger because the pressure of his foot on the accelerator pedal became less when he dozed, and the auto came almost to a standstill. However, that slowed up our travel; so I tried to find some topic of conversation which would arouse him and get some response besides a simple yes or no. Finally, I struck on the topic of orcharding, and the effect was magical! He woke up immediately—and was he wide awake! I had mentioned the effect of spray poisoning on the market of fruit, and that brought him out of his coma with a vengeance. He was an extensive orchardist, and felt that his profits were being eaten up as a result of having to wash and clean fruit to meet the requirements of new laws. He began to talk, and there was no sleeping after that!

He was not alone in feeling disturbed about the situation. Many others were asking what the future would bring if matters kept on going from bad to worse, as appeared to be the case. More spraying with poisons brought good results for a while, although spraying had to be increased continually, and more poison had to be used. Now we are learning that, even though many deleterious insects are being destroyed, beneficial ones are also being killed, and nature's balance is disturbed. We are learning also that some of the harmful insects are able to survive the poison, and these pass their greater resistance on to their offspring thus producing a strain of insects which the poison will not kill. So new poisons have to be developed and stronger solutions used.

This state of things has led to investigation of control of predatory insects by biological means, and of better cultural methods that give promise of success.

Then, looking into the deterioration of fertility of the soil, it has been found that tons of poisonous spray materials and strong chemical fertilizers have changed the character of the soil; have killed off earthworms along with insects, and have also killed insectivorous birds eating the poisoned insects or worms.

To lessen the disasters caused by strong inorganic fertilizers, biodynamic culture and fertilizing the soil by the use of organic fertilizers, have come into use, notably in Denmark.

With no earthworms in the soil, it becomes hard and lacking in humus. Even adding more inorganic fertilizer fails to result in good crops. It seems necessary to add organic material to the soil, and to this Charles Darwin, in 1881, called attention, in a book called **The Formation of Vegetable Mould Through the Action of Earthworms.** This book did not attract the general attention of horticulturists, as might have been hoped. Darwin wrote: "Without the work of (the humble earthworm), who knows nothing of the benefits he confers upon mankind, agriculture, as we know it, would be very difficult, if not wholly impossible."

Yet, mankind went ahead killing earthworms, and has not yet stopped the practice!

Darwin showed that chemists, with all their ingenuity, can devise no substitute to replace the products of the earthworm in enriching the soil. He replaces not only the chemist, but to a large extent the plow. Earthworm castings are not only the most perfect form of humus, but the worm improves the soil by aeration through the countless tunnels which it is continually making.

The earthworm has the voracity and capacity for work of a stone-crusher. It has a gizzard which pulverizes anything it can swallow. It is constantly devouring not only dead grasses, leaves, and decomposing organic material, but also earth itself, and tiny particles of stone. After extracting what it needs, it then passes out the worked-over matter, with the addition of the products of its body metabolism, in the form of "castings", as they are called, one of the richest plant foods produced by nature. Moreover, these castings are mostly in finely divided colloid form, ready to be absorbed by plants.

Darwin shows also that an important factor in the formation of humus is bacteria of certain types, and that these bacteria are able to permeate soils well-tunneled by earthworms far more readily than wormless soils. (Strong inorganic fertilizers and poisons destroy these bacteria as well as earthworms). Moreover, the wormholes are canals and reservoirs for spreading and storing moisture in the soil. Rain is stored, with the help of earthworms, to a depth of six feet or more.

Darwin estimated that two and a half million earthworms were required for a healthy English acre, and that this number would contribute annually about eighteen tons of castings to make the acre fertile; that they would further increase productivity by aeration; by bringing tons of sub-soil up and converting it into fertile soil; and by conservation of moisture.

Although this book was published 60 years ago, it is still worth reading. To anyone who wishes to find the fundamental ideas or bio-dynamic methods of agriculture, and to learn how to harness the earthworms to his advantage, I would recommend this old book of Darwin's, and also some modern ones, such as Dr. Ehrenfried Pfeiffer's **Bio-Dynamic Farming and Gardening,** Dr. George Sheffield Oliver's, **Our Friend, the Earthworm,** and Dr. Thos. J. Barrett's **Harnessing the Earthworm.**

The beekeeper should make himself able to cooperate understandingly with all efforts to bring farming and orcharding practices into harmony with the laws of nature which, like those of the Medes and Persians, change not. Are we not constantly bringing our beekeeping practices into harmony with those laws and making them work for us instead of against us?

Today, a few people, all over the United States, and more in Europe (where more work has been done on the subject) are returning to natural cultivation; and instead of selling off their good soil with every pound of produce from their farms or orchards, are permitting billions of earthworms to cooperate with them, restoring and adding fertility to the

soil faster than the crops take it out. Soil-renewing is being placed on a self-renewing basis at practically no cost. When bankruptcy threatens because of loss of soil fertility, the answer lies not in foreclosures, but in the lowly earthworm!

Where earthworms are used in irrigated regions, horticulture flourishes with only half the water and much less cultivation than on neighboring farms where earthworms are not encouraged. Cultivation is less because the same irrigation furrows are used year after year, and the earthworm, instead of the tractor, does the cultivation. It has been demonstrated that both vegetables and fruit trees in many instances are able to throw off their pests or resist them if they are deriving the proper nourishment from the soil—then spraying becomes unnecessary.

Worth considering, isn't it?

Charles Darwin may be credited with laying the basis for this long-unused revolution in agriculture; but its development here is due to the knowledge of soil and colloid chemistry as worked out by later students, particularly those in our agricultural colleges, and by laymen who have endeavored to put into practice the ideas advanced by the scientist and to check and double-check results so that we may know exactly how the theories work. It is the old idea of experimentation on a small scale and the development of methods that may ultimately be safely practiced even when mass-production is necessary, as under a war economy.

It may be well, here, to give some review of conclusions that have been reached by scientists, in order that our understanding of the relation between chemistry, colloids, and earthworms may be enlarged.

Colloids, both mineral and organic, are of utmost importance. They do not upset the chemistry of the soil as do artificially produced mineral fertilizers. Upon the surface of every colloid particle there is a charge of electricity, either positive or negative, or even multi-polar. This is the most important feature in their usefulness and power. The colloid is inconceivably small; yet it holds the key to nutritional life and the future of agriculture. The colloidal fraction of the soil holds gases and salts, and helps to slow down the leaching of soluble plant foods from the soil. It conserves moisture and provides home and food for the soil's microscopic flora and fauna.

Authorities agree that the larger soil particles are almost inert, and that the very fine material, called colloids, is responsible for most of the changes which take place in the soil. "Weak soils" seem to be those which contain small quantities of colloids, or colloids of low exchange capacity; while "strong soils" contain colloids which insure a large capacity of exchange between soil and plant.

Earthworms grind up or triturate the mulch placed on the surface—whether weeds, grass cuttings, manure, or compost (to none of which strong inorganic chemicals have been added)—and tranform it into soluble, natural organic plant food which is easily absorbed and assimilated by plants. By their constant activity in aeration and cultivation, earthworms keep the soil in excellent condition, and at the same time reduce the water needed for irrigation. To the organic matter of the mulch they add all the small inorganic material they can swallow, and bring much good stuff up from the deep subsoil.

The following scientific authorities are among those who have added to our knowledge, or at least to our desire for further knowledge on this subject:

1. Sir John Russell, director of the famous Rothamstead Experiment Station of London, England, whom I heard lecture in Washington, said in his book, **Soil Conditions and Plant Growth:** "Prior to 1921, soil chemistry had gone as far as its methods allowed, and it was brought to a standstill by the colloids in the soil. But with the development of methods for studying colloids, further advances in soil chemistry have been opened up."

2. Dr. G. J. Bouroucos, soil scientist and plant physiologist, of Michigan Agricultural College, has stated: "It is evident that colloids, more or less entirely, control practically all the physical properties of soils. They must be regarded as a most important part of soils."

3. Milton Whitney former chief of the USDA Bureau of Soils has stated that it seems probable that the digestive system of the soil, assisted by phosphorous compounds, destroys certain toxic organic compounds in the soil. The true nutritive solution in the soil, he points out, is kept at a constant standard from the storage of plant foods in the soil colloids. In the breaking down processes in the soil by which plant foods are prepared from the mineral elements, colloids are as essential as they are in the building up process. (May not earthworms contribute a great deal to these processes?)

4. Dr. Charles Northen says that colloids retain plant food and are not only nourishment in themselves, but ensure an even distribution of nourishment in the soil, furnish and regulate this as the plant needs it and in a form that is natural to plant structure. They activate photosynthesis, making use of sunlight and vitalize both the hormones and the processes they control.

They also act as catalysts, viz., they cause changes and reactions to occur without themselves entering into the combinations or actually becoming a part of the substances. They remain to repeat their work again and again.

All life forces, Dr. Northen continues, all the processes of growth, are based directly or indirectly on these colloidal processes. Even the delicate fragrances of flowers depend upon them. On these processes depend the growth, the nutrition, the use of moisture by plants, and their resistance to disease.

5. Dr. P. L. Gile, Chief, Soil Chemical Division, Bureau of Soils, USDA., says of colloids that their great power of absorbing water is the main factor in increasing the water-holding capacity of soils. They also regulate the capacity of soils to give up their moisture to plants. Bacterial life in the soil is dependent upon the kind and quantity of colloids the soil contains.

6. W. L. Powers, United States Department of Agriculture says: "I believe that modern soil scientists are fairly well agreed that the progress made in recent years is largely due to the development of our knowledge of the colloidal fraction of the soil."

7. M. S. Anderson, Associate Chemist, Bureau of Soil Chemistry, USDA, states that approximately 95 per cent of the absorbtive power of the soil is due to soil colloids. The influence of soil colloids on the physical and chemical properties of soils, is coming to be one of the most important studies in soil sciences.

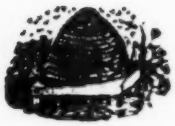
8. Jerome Alexander, author of **Colloid Chemistry, Principles and Applications,** says that permeability, capillarity, absorption, and moisture content, are dependent on the colloids in the soil.

9. Dr. S. E. Mattson, Soil Scientist, University of Berlin, says that the absorbing powers of a soil for various substances is practically all due to the colloid fraction.

10. Milton Whitney says that mineral colloids have at times been classed as fertilizers, but a more careful study of their physical properties has shown that they are also amenders and have a much wider range of action than fertilizers. It is known that soil colloids have the main offices of controlling the life in the soil and preserving the plant foods as well as the moisture. Many complex and not understood processes are constantly taking place in soil colloids. All plant food in colloidal state appears most active and efficient and seems to have remarkable powers.

11. H. J. Wheeler of the Rhode Island Experiment Station says it is obvious that since plants are colloidal structures, and life is a succession of colloidal phenomena, food materials are best supplied as colloids, since they are then in the form in which

(Please turn to page 457)



EDITORIAL

CHANGES AHEAD

IF the war lasts as long as some seem to expect, it is likely to make many lasting changes in our habits. Already we are learning to do without many things to which we have long been accustomed but shortages have not yet reached a serious stage.

The Revolutionary War turned the public from tea that came from China, as a table beverage, to teas made from familiar plants which grew here. We have many plants which will provide a satisfactory substitute, once we become accustomed to them. If the War is short we will soon return to our former habits but if it continues until we cease to miss the products from abroad on which we now depend, we may never return to their use to the former extent.

Present day housewives go to the store for all flavors and seasonings. Many of them come from far places and when present stocks are exhausted can no longer be had. Our grandmothers raised materials for flavoring and seasoning at home and we may learn to do likewise. Many of these old-time garden herbs are good honey plants and any general tendency to return to their use will improve the bee pasture.

♦

COST OF POOR COMBS

THERE are few apiaries which might not profit substantially by weeding out poor combs. The best investment that any beekeeper can make is in good combs, for the kind of combs within the hive measure the profit that will be returned to the beekeeper.

In a good season a colony on poor combs may store a profitable crop of surplus honey although the amount would be much larger if all combs were good. In a poor season it often happens that the colonies on poor combs rear so many drones that they store no surplus and may even require feed for winter.

A well built comb properly wired provides well for the queen who may occupy nearly all of it for brood rearing. When conditions are favorable one often sees eggs and brood from top to bottom and from end to end of such a comb. With a vigorous queen and a full set of perfect combs one can expect to build a strong colony of bees ahead of the honeyflow and it is only the big colonies that harvest the worth-while crops.

Every drone cell or cell so stretched as to be unfit for brood rearing restricts the activity of the queen to that extent and it is not uncommon to find from ten per cent to thirty per cent of poor comb surface in the hives of the careless beekeeper.

One of the first essentials of success in beekeeping is to eliminate poor combs and replace every such comb with a full sheet of foundation properly supported. Such an investment pays very large dividends.

♦

ACTION AND REACTION

ROGER BABSON, the well-known economist, bases his predictions on the assumption, that, "for every action there is a corresponding reaction." We have passed through a period of low prices and slow demand and now suddenly find ourselves in another period of war boom. Our product is in heavy demand, prices tend to move higher in spite of restrictions intended to prevent runaway markets.

Such periods of temporary prosperity always tend to cause undue expansion. It is easy to imagine that high prices will continue and too often the result is assumption of debts which will later be hard to pay.

It is to be hoped that our people will remember the disaster that followed the last boom when prices tumbled and thousands lost their lifetime accumulations.

"Uncle Henry" Wallace, founder of Wallace's Farmer made a practice of warning his readers against careless investment. He advised the use of surplus funds to improve the home farm. Better livestock, better buildings, more conveniences and labor saving equipment were the things he advised instead of outside investment.

Those who followed his advice and remained out of debt were able to pass through the depression without serious inconvenience while others who bought too much high priced land and assumed heavy debts lost everything.

In the time of prosperity is the time to prepare for adversity. Now is the time to reduce our obligations, improve our stock and equipment and prepare for the reaction that is sure to follow this period of higher prices.

♦

HISTORY REPEATS

THERE is an old saying that "History repeats itself." The midwest has had the best growing season in many years. Rains have been frequent and the soil is saturated with moisture as has not been the case for ten or more years. The honey crop is below average but perhaps we can expect next season to be like those that have followed wet years in the past. In 1915 we had a very similar summer with rain following rain until it was difficult to get the work done. 1916 brought the heaviest honey crop in many years. Since such seasons as this are usually followed by seasons of big honey crops we may confidently look forward to a good year in 1943.

♦

"HEARTSEASE"

DR. V. G. MILUM, of the Illinois University, raises the question as to whether beekeepers should continue to use the name "Heartsease" for *Polygonum persicaria* since the name is not recognized by the botanists.

It appears to be true that the name "Heartsease," as applied to plants of the smartweed family, is commonly used only among the beemen. Just where the custom arose seems impossible to determine but all the old bee books are filled with references to heartsease honey and it would probably be a difficult matter to induce the beemen to drop this particular name. In fact heartsease honey is well known to the honey trade but lady's thumb honey would be a stranger in any market.

The great variety of common names applied to plants in different localities is the source of endless confusion but it seems impossible to secure the general adoption of any one name for a particular plant. When writing for any particular group the object of course is to be understood. If one who writes for beemen were to use any other name than heartsease for honey from this source it is doubtful whether a very large part of his readers would know what he was talking about. The name "Heartsease" has been used to designate honey from *Polygonum persicaria* since before most of us were born and we will save ourselves much difficulty if we respect its age rather than try to change it.

♦

STABILIZING BEE PASTURE

A North Dakota reader advises us that he proposes to try to improve his bee pasture by offering to supply seeds as well as trees and shrubs for planting in the neighborhood. He will even go so far as to plant them if necessary. While this requires work he reminds us that it requires a lot of work to get his bees ready for a honeyflow which may not come and that there is not much money to be made from starving bees. He says that he believes it is easier to change the flora where he is than to move his buildings and equipment. His plan includes the planting of waste lands within reach to plants which yield nectar.

Such a plan is practical in the average neighborhood but it requires a careful study to determine what plants are likely to persist when once established and what to use to insure honey throughout the season. To start the season in the northern plains region it is only necessary to induce the general planting of caragana, or Siberian pea-tree and the tatarian honeysuckle to insure ample forage for the bees. Both are dependably hardy and both yield nectar freely at a critical season of the year. When bought in lots of 1000 they can be had very cheaply from wholesale nurseries. A good salesman could get these planted on half the farms of a community and get paid for doing it since they add much to the attraction of any farm. Most folks want more trees and shrubs but neglect to plant them because they are too busy.

A well-thought-out plan for any neighborhood would include a good source of forage for spring, for mid-season, and for fall. Many home owners would welcome someone who comes with a planting plan to improve their grounds with little effort on their part and would be quite willing to pay the cost. We would like to see someone put such a plan into operation and we hope that our correspondent will carry his proposal into successful operation.

AN INEXPENSIVE PACKING CASE

The question of winter covering for bees has been of interest for a long time. In some sections of the country bees may go through winter uncovered, other localities would not permit this neglect. My opinion, shared I think by the majority of New York beekeepers, is that winter covering is a great advantage if not a necessity.

I have been interested in the method of Professor Rea, of Cornell, and have many times witnessed his demonstrations. I have been impressed by the convincing proofs given by him of the success of his way of winter protection throughout the state of New York. It has a few shortcomings. The method I suggest has all the advantages of the Professor's with some benefits I know he will concede. It is simple and inexpensive.

Assuming you have two or three colonies, arrange them in a group. Remembering the outside measurements of a ten frame hive are 16x20 inches, the group would now be about sixteen inches by four feet. Allow three of four inches all around the three hives and you have 26 inches by four feet, six inches, with the height to be three inches above the hives.

The covering consists of four frames for the sides and one for the top. These frames are made of builders' furring strips and rubberoid. The simplest way to make them is to join the corners with a carpenter's half lap using a straight hack saw and a scratch gauge for the work.

The rubberoid is fastened on with roofing nails or with lath strips. The front frame is the most difficult. Make an individual strip the width of the hive and notch out an entrance about four inches long by three fourth inch wide. Now, with three eighths material, make a tunnel, nailed to this strip of furring, and fasten the tunnel across the hive front. The length of the tunnel should be equal to the distance of the space between the hive and the front frame.

The front frame must also have a wider lower piece of stock to allow for notching over the tunnel. A piece of six inch by seven-eighths pine lumber is good for this.

When the frames are finished, place them around the hives, being careful that the front frame fits nicely over the entrance tunnel. Then nail together temporarily with two inch brads.

Now we are ready for packing. The hives should be on a nice foundation of leaves. Fasten the assembled frames with hooks and eyes at the corners. Pack the empty spaces with dry leaves, pressed down thoroughly. Remove each hive cover and put a piece of burlap or screen over the opening of the inner cover to allow escape of excess moisture during winter. Place plenty of leaves on top. You may put the hive covers in again if you wish.

The top frame is made like the side frames, allowing about two inches all the way around. Put a couple of screw eyes at the corners so the top may be fastened down to them with binding cords or wire. Wind and storm cannot then uncover the hives.

Now the bees are ready for winter. Mark the frames for future use, then in the spring they may be stored in the garage or cellar and, being in the flat, they will not take up much room. They may be used year after year. One person may do the work alone.

Harry Newman,
New York.

♦

TWO QUEENS BEFORE FLOW STARTS BUT NOT AFTER

(Continued from page 443)

inite it is thought that two queen colonies will not swarm, that they will gather more honey per pound of bees, that the yard work per pound of honey is reduced, that a beekeeper's crop is automatically doubled. These thoughts have never been so bluntly or outrightly expressed but they have been advanced in various ways to some extent. My own practical, under pressure, experience has taught me that for the average producer **two queen colonies during the honeyflow are not advisable.** There are too many undesirable features connected with this system. First the ever present danger of one of the queens being killed. Second, the difficulty (especially true of eight frame equipment) of getting sufficient super room properly distributed on the hive. Third, the grave danger of an entire yard of tall colonies being blown over during a severe windstorm. Some localities are worse than others in this respect. Fourth, the increase in work due to having two brood nests and double height colonies. It doesn't matter whether the second brood nest is at the very top or only half way to the top it invariably must be set off and set on again whenever the colony is worked. Also, in regard to handling supers either empty or full it requires approximately twice as many foot pounds of work to handle the equipment on one eight foot colony as on two four foot colonies.* In other words the actual lifting work done on fifty two-queen colonies is equal to the lifting work on two hundred single queen and if we were to consider the actual physical effort put forth the difference would be still greater. I didn't run four hundred two-queen colonies through a good flow without learning a great deal about lifting. I swore I would never do it again. Fifty two queen colonies will swarm just as readily as single queen and will take either or both of the queens. Due to the difficulty of proper supering I would say the swarming danger is greater with them than with single. There is no hidden mystery about the arrangement which keeps them from swarming.

In regard to storing ability I doubt if there is any great difference. One two-queen stand will, of course, gather more than one single but that is hardly the comparison which should be made. It should be between one two-queen colony and two single queen colonies. If the comparison is fairly made I think there will be a slight edge in favor of the two singles.

In comparing the various methods of handling bees it strikes me that the most important part, by far, in any method is what occurs before the flow starts. Building colonies so they will have a large amount of brood at the commencement of the flow is the secret of getting large crops. Two queens on a hive before the flow starts will do this, two queens on a hive after will not.

Colorado.

* This is a mathematical fact but assumes that as the supers are taken off they are lifted clear to the ground. If some special scaffolding were used so that the supers were lifted only half way to the ground then the work done would be equal for 50-2's and 100-1's.

♦

CHEMICALS

I use carbolic acid to drive bees out of supers and to prevent robbing. I have also used Lysol to prevent robbing. Dilute it with water. It has a soapy base and stays better. Be careful, as it may scent the honey. I use cyanogas in several ways, to kill robbers and to kill undesirable colonies.

A. G. Pastian,
South Dakota.

♦

OIL OF WORMWOOD FOR ROBBERS

On page 352 in August, Mr. Pastain suggests cyanogas for robbers. His method is destructive of bees. Why not place in his dummy hive a cloth dipped in oil of wormwood? Robbers promptly go home where they belong.

R. Pullen,
Michigan.

FURTHER FACTS ON FATHER FERLIN'S FRAME

A Follow-Up to the July Article

The many—close to a hundred—who have written to me recently for information in regards to the improved frame have several misleading notions . . . . especially concerning the size of the hive and its construction. Only the width and the length of my hive are identical with the commonly used hive. However the height is different. As is also the method of stacking the frames inside the hive.

In the article of some months ago, I did not make mention of an extraordinary feature—a new, convenient and practical feeding facility.

Therefore besides the numerous improvements contained in the frame, this groove, situated atop the frame for bee feeding, makes the frame so much more advantageous. Since this groove is an entirely new addition, it requires a simple apparatus which I also developed this summer. Most beekeepers give their hives an extra store of food in the spring and during cold, rainy periods. Package bees often require extra feeding too.

Everything considered, there are four essential improvements in the frame: hive enlargement, frame development, inner cover and the above mentioned feeding groove with apparatus.

It must be realized that each of these improvements took—are still taking—much time to develop. In fact, perfection has yet to be achieved in the feeding system. When everything is brought up to the perfected stage in this regard, I will be able to offer more complete and detailed information.

My July article in the American Bee Journal caused a reaction that overwhelmed me with letters from all parts of America and Canada. Each requested the use of the frame. Summer work kept me quite busy. Action is now being taken towards the obtaining of a patent. Then work can go forward. The frames will be manufactured and thereby made available to the general public. Let me here take the liberty of sincerely thanking the scores of interested, encouraging correspondents.

I am positive that upon seeing the frame in actual operation, the most skeptical beekeeper will be convinced of its profitable practicability. And I reiterate: without this new frame, my enthusiasm for bee culture would be lost. My everyday experience with more than a thousand frames in my fifty hives with supers has proved to me that this frame is without a peer at present.

Rev. John Ferlin, O. F. M.,
Lemont, Illinois.

— ♦ —

BEEKEEPING IN CANADA

Sugar rationing in Canada, and especially in British Columbia, has led many people to raise bees for honey, according to A. W. Finlay, provincial apiarist, New Westminster. Mr. Finlay says there are now in British Columbia more than 4,700 registered beekeepers and nearly 300 new permits have been issued since the start of the year.

The wet spring and early summer have been unfavorable, he says. "I have never known a season to be so unfavorable for the raising of bees," he adds. Many colonies are dead and others are dying of starvation in spite of the fact that special permits for sugar have been granted beekeepers for the purpose of feeding their bees. Mr. Finlay says beekeepers are natural optimists, and that they still hang on to the hope that weather conditions will be better for the bees in the late summer, allowing a generous harvest of honey.

According to Mr. Finlay, the irrigated areas, with longer hours of sunshine are the best for heavy honey production, the average production per colony being double that of coastal areas. The Cowichan Lake district on Vancouver Island is considered one of the most favored spots for beekeepers on the coast, and often more than 100 pounds of honey are produced by one colony in a season if the weather is good.

F. H. Fullerton,
Canada.

A WORD TO THE WISE

(Continued from page 429)

the promised period of prosperity for the permanent improvement of our industry. Let us do this by improving our product, thereby increasing its appeal and usefulness. Now is the time to improve methods of extracting and packing honey. Now is the time to discard outmoded methods and worn out equipment. Let us take advantage of this time to improve our stock, to replace old yard equipment, to get rid of odd and misfit units in general.

Let us use the promised period of prosperity to get out of debt and build up a comfortable reserve in order that we may stay out. In short let the members of the beekeeping industry prove their wisdom by turning this opportunity to its most useful ends; to strengthen our organizations; to promote the popularity of our product. By best doing these things we can best help furnish the food needed so badly, and it must naturally follow that we shall then be putting our own house in order so that in the peace we plan to foster, beekeeping may be a stronger, more substantial industry than it has ever been, occupying a new, rightly deserved place of importance in a new world.—("Inklings")

SHORT CROP IN NEW ZEALAND

The Journal has been arriving regularly except the December and January numbers which were delayed on account of the Pacific incident. As you probably know, New Zealand lies directly across the supply lines to Australia and it is possible that the enemy may try to cut this line by invading our country. Should this be so, I do not think it will be a matter of victor or vanquished but of who shall survive. The people are one hundred per cent behind the government and are accepting and asking for legislation which would not have been accepted in times of peace

Every able-bodied male here is being trained to arms, the younger men for service overseas, the older men for home defense. It is over twenty-five years since I was in a uniform, but this new training is helping me to regain my health. Commercial beekeepers working enough colonies are doing their training in the winter months and are released for the busy season with the bees.

Unfortunately the past honey season was the worst ever experienced over the whole New Zealand and after contracts for honey for the use of the Red Cross, Army, Air Force, Navy, etc., have been fulfilled, little, if any, honey will be available for the general public.

With honey crop being handled by the government, marketing problems for us do not exist and the public is assured in normal seasons of a good quality pack, true to grade, at prices within reach of the average family.

Honey prices have been stabilized at 14 cents pro rata net to the producer. With the new $400,000 building just finished at Auckland for the Internal Marketing Department, the honey section is using most of the space for storage and processing and packing honey with one of the most up-to-date plants in the world.

The cost to the producer of packing, processing and selling is less than two and one-half per cent. The remainder is paid into a pool, 14 cents pro rata paid to producers and what is left is spent or distributed for the good of the industry by a board of three members elected by the producers themselves.

R. Bennie,
New Zealand.

CAUCASIANS VS. ITALIANS IN THE NORTH

It is generally accepted that yellow bees including Italians originated in warm countries with more or less short winters, although sometimes severe; and that black bees, including Caucasians, originated in the colder countries with longer winters.

At any rate after watching the behaviour of these two races here in the North for five years I have come to the conclusion that the Caucasians are much more suited for a climate like ours than the Italians. Our winters are long and cold, with the temperature 30 below for as long as a month at a time, and bees often do not get a flight for three months.

That the Caucasian bees, drones, and queens do fly in colder weather than Italians is by now an established fact; in the fall I have often watched the Caucasian bees making their way into the Italian hives to rob long before the Italians are even stirring. Therefore I have long since come to the conclusion that Italian and Caucasian bees should not be kept in the same apiary.

On opening the Caucasian hive after the first warm day in January you will almost always find brood, often a month earlier than in the Italian.

As a result they are always stronger during the willow, maple, sunflower, dandelion, and fruit bloom flows, than the Italians and this, coupled with the fact that they do fly in slightly colder weather, accounts for the fact that they usually get a full super of surplus honey to an average of a half a super for the Italians in the combined early flows. That the Caucasian bees are quieter even than the Italians, is, I think, now well known and when the bees are cross we always work the Caucasian bees.

About June 10, or about the time our main flow commences here from sweet clover, the Caucasians reach their peak, while the Italians do not as a rule reach their peak till about two weeks later.

At about this time, June 25 or a little later, the Caucasian queens usually stop laying. Yes, and right at the peak of the honeyflow, so that about the last week in July the Caucasians have little or no brood in their brood nest but, except for a space in the center, is crammed full of honey and pollen and is capped. At this same time the Italians have the greatest amount of brood. This is the reason the Caucasians can send more bees to the fields as there is no brood to be looked after. This condition continues to the end of the honeyflow when the bees clean out the uncapped honey in the center of the brood nest about six frames wide and two-thirds up the comb in the center and the queen again commences to lay and produces a nice cluster of young bees for the winter. As all the bees in the hives are fielders and have worked hard during the honeyflow they will die before winter, and there we are with a nice cluster of young bees in a brood nest crammed full of honey and pollen. In other words a brood nest in much better condition for bees to winter in than the beekeeper himself could arrange.

On the other hand the Italians have brood hatching right up to the time that cool weather comes, and as a result they have a larger cluster of bees but the bees are of all ages, and as the cluster is larger they will use more stores in the early winter but will be stronger in the spring.

In addition to this most of the combs in the brood nest will be empty and combs of honey will have to be taken from the supers to make up stores for winter, thus mixing up super and brood combs. Or an additional super of honey will have to be left on the hives, making it necessary to use much more packing and have a larger winter case. Caucasians almost always have enough stores in a standard size brood nest to winter on and and last till the dandelion flow, when they are unpacked and a second story is put on.

It has been said that all black bees are subject to European foulbrood and for this reason I believe Italians have become the standard bee in both the North and the South of North America. Yet while there is some European foulbrood in this district I have never found any in my Caucasian bees.

It has been said that Caucasians propolize badly and they fill the entrance with pieces of propolis as large as eggs if it is left open in the fall, otherwise they are little different from Italians in this respect.

To sum it all up, the Caucasians produce the greatest amount of bees of the right age at the right time to do the best work. They gather more honey from the early flows than Italians and at least as much in the late flows. They are quieter and can be worked in less favorable weather. They prepare their own brood nest for winter and require less packing than Italians, and why they are not kept by a greater number of northern beekeepers I have never been able to understand.

W. H. McMullen,
British Columbia, Canada.

DEPARTMENTS

—Photo by Edgar Abernethy, North Carolina

FROM THIS—THE GOLDEN POLLEN

RECIPES FOR OCTOBER

Egg Nog

3 eggs
3 tablespoons honey
Few grains salt
2¼ cups Evaporated milk
2¼ cups cold water
Nutmeg

Separate yolk and whites of eggs. Beat yolks with honey, and add salt. Add milk and water. Fold in the stiffly beaten whites lightly but thoroughly. Pour into glasses and sprinkle with nutmeg. Yield: 6 servings.

Irradiated Evaporated
Milk Institute.

♦

If You Like a Night Cap

Try this: heat 1 cup of canned unsweetened pineapple juice to the boiling point, pour juice over 2 tablespoons honey and 1 tablespoon lemon juice. The aroma is something to talk about and so is the flavor. Drink while it's hot and crawl in between the sheets.

Dole Pineapple Company.

♦

Hot Lemonade for a Cold

For a cold, the old-fashioned remedy is hot lemonade. To juice of 2 Sunkist lemons add 1 cup boiling water. Sweeten to taste with honey. Drink on retiring.

Equal parts of Sunkist lemon juice and honey often provide a soothing remedy for throat tickling coughs.

California Fruit Growers
Exchange, Los Angeles.

Honey Pumpkin Pie

¼ cup granulated sugar
½ teaspoon salt
1 teaspoon cinnamon
1 teaspoon ginger
¼ teaspoon cloves
1½ cups canned pumpkin
2 eggs, beaten
1 cup evaporated milk
½ cup water
¼ cup strained honey

Blend sugar, salt, spices. Combine with pumpkin. Stir in eggs. Add milk, water and honey. Beat thoroughly. Line pie pan with Crisco pastry. Pour in mixture. Bake in moderately hot oven (375° F.) an hour or until filling sets. Remove from oven: dribble 1 teaspoon honey over top.

Crisco Pie Crust

1½ cups flour
½ teaspoon salt
½ cup Crisco
2 to 3 tablespoons water

Sift flour with salt. Cut in Crisco till mixture resembles coarse cornmeal. Stir in water until all the dry mixture is collected into a ball. Roll out ⅛ thick. Lay pastry loosely in pie pan—then gently press to the sides to prevent air pockets forming.

—Crisco, Proctor and Gamble

♦

Pumpkin Pie Filling

3 eggs
¾ cup honey
1 cup strained and steamed pumpkin
½ cup milk
2 teaspoon cinnamon
1 teaspoon ginger
¼ teaspoon salt

Mix the ingredients in order given and bake in one crust. Garnish each piece of pie with a mound of whipped cream with honey in the center.

Mrs. Walter B. Hoffman,
South Dakota.

♦

Honey Nut Bread

2½ cups flour
1 teaspoon salt
1 teaspoon soda
2/3 cup raisins
2 tablespoons shortening
2/3 cup chopped nuts
¾ cup sour milk
1 tablespoon orange peel chopped
1 cup honey
1 egg

Sift dry ingredients together. Scald raisins. Cream shortening and honey well. Add sour milk and dry ingredients alternately. Add fruit peel and nuts. Pour into a well greased loaf pan (bottom lined with wax paper) and bake at 300 degrees for 1 hour and 40 minutes.

Mrs. Harriet Grace.

THIS AND THAT • • FROM HERE AND THERE

FINE YARD

My wife and I try to make our apiary one of the finest in Wisconsin. My dad gave us several colonies of bees. It was originally a hobby but several years ago I almost lost my job, so we developed our hobby into a business.

Our hives are on hive stands imbedded in concrete. We try to keep the grass cut between the rows although, because I work five days a week, it is hard to keep up. However, it pays to have a good looking yard, and it helps to sell honey. We do not try to produce quantity, but quality. We try not to feed our bees sugar, but give them their own honey.

Edwin J. Mintzlaff,
Wisconsin.

—♦—

HARRY LEID, NOW TWELVE YEARS

This was Harry Leid at the age of seven at his grandfather's L. C. Taylor, Gibsonburg, Ohio; a double swarm. Harry wanted to cut the swarm down.

When Harry was seven he had been ill for nearly a year from two major operations. Outdoors with the bees helped him back to health.

♦

A DAILY JOB

This is a day's job when there is a good honeyflow. In a commercial outfit of hundreds of colonies, supers must move to the bees day by day for considerable time during the flow. After that, the main job is to let the honey become ripe and full, with supers that are solid and heavy to take off. Then the final task of the season is the removal of the crop.

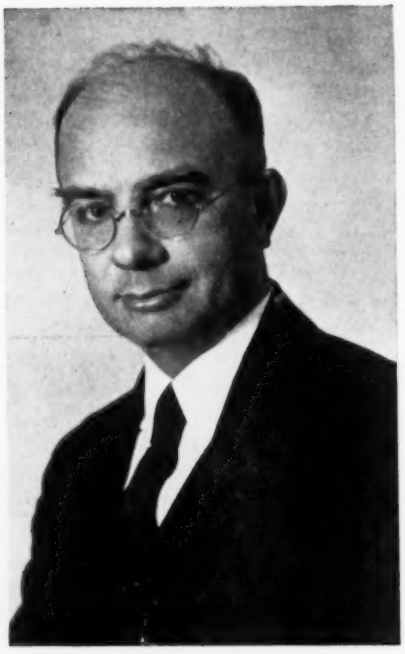
Commercial honey production produces an altogether different seasonal operation than the sideline apiary.

♦

MODIFIED HIVES, TEN FRAME SUPERS

Harry G. Meyers, Ohio, uses Modified hives with ten frame supers. Strips at the side of the ten frame hive body close any space left when the smaller hive sits on top of the larger one. In this picture, apparently there are two ten-frame shallow supers at the top. Note also that Mr. Meyers uses a hive stand well up from the ground.

MEETINGS AND EVENTS



Harold J. Clay

Change in Management of Honey Marketing Reports

The Honey Market News Report of the Department of Agriculture is now under "new editorial management." Mr. Harold J. Clay, who has edited and developed these reports since they were initiated in 1917 at the suggestion of Dr. E. F. Phillips, has been transferred from the Market News Division to the Market Programs Division of the Fruit and Vegetable Branch of the Agricultural Marketing Administration, to give it the full official title.

In his present position Mr. Clay will handle honey marketing problems and will continue his present contacts with the War Production Board, the office of Price Adminstration, the Office of Agricultural War Relations, the Farm Credit Administration (cooperative activities), and with the Division of Bee Culture of the Bureau of Entomology and Plant Quarantine. Letters and inquiries concerning the marketing of honey and beeswax can be addressed to him, as in the past.

The new editor of the Honey Market News Report is Mr. C. D. Schoolcraft, who until recently was in the New York office of the Market News Service.

The exact reason for this change is not known to us. It is hoped, however, that there will be no impairment in the excellent service rendered beekeepers for whch Mr. Clay was so largely responsible. It would seem not the most propitious time to make a change of this sort and with all due respect to Mr. Schoolcraft, whom we welcome into the brotherhood of beekeepers, Mr. Clay has no peer in his particular field. Had it not been for the mass of information that he has accumulated on honey marketing, it is doubtful that the War Production Board and other agencies would have had the basis upon which to promulgate the various orders that have had such a direct bearing in maintaining a sound bee culture during these troubled times.

♦

Chippewa County (Wisconsin) Beekeepers Association

The Chippewa County Beekeepers Association was organized at Chippewa Falls, Wisconsin, August 13 with E. A. Collins as president; A. J. Mohr, vice-president, and Adolph Peterson, secretary-treasurer.

H. C. Brunner.

♦

New Extension Specialist for North Carolina

The North Carolina Extension Division advises that Mr. J. Myron Maxwell, formerly with the Oklahoma Extension Division has been appointed Extension Entomologist for the state of North Carolina.

Mr. Maxwell is to take the place of both the late Mr. Sams and of the other entomologists, the two of them having previously divided the work in North Carolin ..

Mr. Meacham, secretary of the North Carolina Division advises that should the state authorities find that a full time beekeeping extension man is needed he will undoubtedly be appointed in due course of time.

♦

Bronx Beekeepers Association

The monthly meeting of the Bronx County Beekeepers association will be held at the home, and apiary of Mr. W. L. Jones, 1727 Undercliff Avenue, Bronx, New York City, on Sunday afternoon, October 11th.

We expect at this time to give a demonstration for winter covering which has proved very successful for this section of the country. We also expect to have at this meeting a talented speaker on bee topics. Bring your questions.

Refreshments will be served, all interested in beekeeping welcomed. The meeting is free.

Harry Newman,
Secretary.

♦

Requests Sugar for Feeding

Members of the Manitowoc County Beekeepers' Association meeting on September 1 at the village hall in Reedsville, Wisconsin, signed a request for extra sugar for winter feeding of their bees. A total of 15,600 pounds for the 1,649 hives of the 23 members making the request, was asked for.

Fewer Colonies in Milwaukee

The honeyflow this season was reported as being one of the poorest in many years due to the excessive rain and cool weather during the flying season. It was said that there will be very little honey on the market and most of the colonies have not carried enough for their winter food supply.

According to Tax Commissioner Thomas A. Byrne, the number of beehives in Milwaukee declined from 110 in 1941 to 73 in 1942 and the tax against them dropped from $11.40 last year to $6.50 this year.

H. C. Brunner.

♦

British Columbia Bees Busy

J. B. Munro, deputy minister of agriculture, returned to his office at Victoria, B. C., recently after a lengthy illness, with a story of a flood of honey.

While convalescing at Notch Hill this spring he had six colonies of bees established. He was not able to give them much attention until recently. Then he opened the hives to extract the honey hoping to get a few pounds for the table of his family during the winter.

"Honey," he exclaimed, "There was a flood of it. I filled up every jar I could find. I bought all the sealers at the local store; I filled pans and jam pots with it, and still there were more buckets full of it.

"Those bees surely knew that there was a war on and they did their part. Instead of getting enough for my own needs those six colonies gave me more than 800 pounds of pure honey—or an average of 140 pounds to the hive."

F. H. Fullerton,
Canada.

♦

Louis Schmidt

Louis Schmidt, 87, pioneer beekeeper in the vicinity of De Pere,

Wisconsin, died September 10 at his home in that city. The only survivor is a niece.

H. C. Brunner.

♦

1942 Apiary Awards at Missouri State Fair

The 1942 Missouri State Fair Honey Show, in spite of a poor season for clover nectar, was a high quality exhibit. Many Missouri beekeepers found feeding necessary till July 1 and a light crop of clover honey in this area is assured according to Geo. D. Jones, Superintendent.

Interest in honey cookery was indicated in a record show judged by Miss Edith A. Dwight, Linn, Missouri. Recipes were copied for using the "Perfect Sweet" in substituting for sugars.

Beeswax, a product much in demand for War Production by the Government, furnished a very worthwhile exhibit according to Guy Diemer, Liberty, Missouri, judge of the apiary show.

Those winning prizes for the best displays in Honey, Bees and Beeswax, and for Honey Cookery, are as follows: Othe C. Kerby, Sedalia; Carl Neef, Boonville; Wm. Brengarth, Boonville; Alice C. Kerby, Sedalia; Ollie C. Kerby, Sedalia; W. A. Scott, La Monte; Mrs. Ervin T. Moon, Glensted; Mrs. W. A. Scott, La Monte; Mary Jane Scotten, Sedalia; Mrs. George Landes, Sedalia; Miss Edith A. Dwight, Linn; Mrs. Lawrence E. Koeller, Sedalia; Mrs. Roy Huls, Oak Grove; Mrs. Russell Cramer, Boonville; Mrs. C. V. Huddleston, Sedalia; Mrs. C. E. Thorp, Sedalia; Mrs. Chas. F. Hert, Sedalia; Lucile Cramer, Lamine; Mrs. E. H. Bunckhorst, Sedalia; Mrs. J. Fred Robertson, Sedalia; and Mrs. Chas. Grevillot, Jr., Tipton.

♦

Middlesex County (Mass.) Meeting

The Middlesex County Beekeepers' Association will meet at 19 Everett Street, Concord, Massachusetts, at seven P. M., Saturday, October 24. Mrs. Benjamin A. Hildreth, of Hollliston, will be in charge of the supper featuring honey baked beans 'a la Norton, frankfurters, potato salad, rolls with comb honey, coffee and honey apple pie.

Hugh H. Spencer, of Weston, will entertain with a talk on "Adventures of a Beekeeper's First Year." Bring your beekeeping problems and suggestions.

A. M. Southwick,
Secretary.

GOVERNMENT HONEY REPORT FOR 1942

The Bureau of Agricultural Economics of the Department of Agriculture at Washington, D. C. has issued their report of the 1942 honey crop. Their report is dated September 16.

According to their estimate the crop this year will be 13 per cent less than for 1941, and this took into consideration any possible fall flows. While the reporters would indicate that the crop is 21 per cent less, there has been a 10 per cent increase in number of colonies to partly offset the poor crop. A total crop of 179,653,000 pounds is indicated as against 206,591,000 pounds in 1941.

The decrease is greatest in the North Central States, dropping from 60.3 pounds in 1941 to 38.8 pounds in 1942; the North Atlantic States dropped from 52.1 pounds to 34.9 pounds and the Southern States from 22.5 pounds to 21.2 pounds. The West shows an increase from 56 pounds to 57.0 pounds while California shows a 14 per cent decrease in yield but a 11 per cent increase in number of colonies. In all instances there has been a substantial increase in number of colonies, but just how many of these did not become honey producers on account of the inclement conditions, is not stated.

It is probable that a larger amount of the new crop has moved up to date of the report than usual. However, the report does not mention this point.

Wholesale prices being received during August was 11.4 cents compared with 6.5 cents last year. Comb was bringing 20.2 cents as against 16.7 cents a year ago, while Chunk honey was going at 16.9 compared to 13.3. Beeswax prices were decidedly up averaging 41.8 cents as against 35.6 in 1941 and the very low price of 22.5 in 1940.

Revised estimates for 1942 will be published in December.

♦

BEE'S STING CAUSES FARMER'S DEATH

Charles Sullivan, a farmer living near Afton, Iowa recently died from the effects of a bee sting. He lived three quarters of an hour after he had been stung on the back of his neck by a bee.

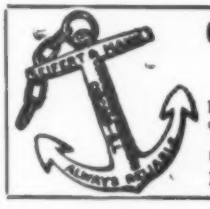
A. G. Kuerston,
Iowa.

NO MORE QUEENS Until April 1943—Keep us in mind.
CITRONELLE BEE CO.
CITRONELLE, ALABAMA

CARNIOLANS CAUCASIANS
A few fine Carniolan and Caucasian queens left. Not too late to replace a poor or failing queen here and there. Untested 60c each; 6 or more 50c each. Tested $1.00. By air mail 5c extra per queen.
ALBERT G. HANN, Glen Gardner, N. J.

WANTED Thousands of Rabbits and other Small Stock, Poultry and Birds, Let
"STANDARD RABBIT & PET JOURNAL"
Bring you the Monthly News of Rabbit, Cavy, Small Stock, Poultry, Birds and other Pets.
Standard Rabbit & Pet Journal
Box 251 MILTON, PA
Special Year 50c; 3 Years $1. Sample, Dime.

The BEST PACKAGE
to be had. About 75% baby bees, 25% teachers.
A good Italian queen raised right.
We try to make you money.
The VICTOR APIARIES, Shepherd, Texas



CONSIGNMENTS WANTED
Comb and strained honey. We pay highest market prices.
Please write for tags and quotations.
106 S. Water Market

QUEENS
Having purchased David Running Apiaries of Alabama, we can now supply a limited number of queens from that stock in addition to our regular imported stock strain. Queen, either strain 60c each. For quantity prices write.
ROSSMAN & LONG
Box 133 Moultrie, Georgia

PIGEONS
If you are interested in Pigeons, you need the AMERICAN PIGEON JOURNAL, an informational instructive 52 page monthly magazine, Sample 15c; 12 months, $1.50.
AMERICAN PIGEON JOURNAL
Dept. B Warrenton, Mo

WESTERN CANADA BEEKEEPER
Subscription $1.00 per year, $1.50 two years, $2.00 three years. In combination with American Bee Journal $1.60 per year.
Timely topics on western Canadian beekeeping and all the news about Canada and Canadian markets. You cannot afford to be without the most up-to-date information in these days of great changes. Sample copy free. Address **WESTERN CANADA BEEKEEPER, Wallingford Building, Winnipeg, Manitoba, Canada.**

American Bee Journal Classified Ads Bring Satisfactory Results

BUY
UNITED STATES
WAR
BONDS
AND
STAMPS

QUEENS FOR REQUEENING
Quality and Service of the Best
1 to 24, 50c; 25 to 49, 45c; 50 to 100, 40c. Safe arrival and satisfaction guaranteed.
N. FOREHAND
FLORALA, ALA.

THRIFTY QUEENS
1 to 24 60c each; 25 to 99 55c each; 100 up 50c each.
THRIFTY BEES are guaranteed to please. Fifty years' experience assures you of the finest stock and good service.
W. J. FOREHAND & SONS
Fort Deposit, Alabama
Breeders since 1892

ST. ROMAIN'S HONEY GIRL ITALIANS
HARDY, GOOD HONEY PRODUCERS, GENTLE
2-Lbs. bees with young queen--$2.50
Untested (young) queens, 1 to 3, 75c each; 4 to 9, 65c each; 10 or more 60c each.
ST. ROMAIN'S HONEY GIRL APIARIES
MOREAUVILLE, LOUISIANA

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"Australasian Beekeeper"
Subscription 5 shillings per year, start any time. Enquire for International money order for 5 shillings (Australian) at your Post Office Write now to The Editor, P. O. Box 20, West Maitland, New South Wales, Australia

PACKAGE BEES AND QUEENS
CAUCASIAN OR ITALIAN
DAVIS BROS.
Rt. 7, Box 3914 Sacramento, Calif.

NOTICE
We cannot accept any more orders for queens this season. Thanks for your patronage, keep us in mind for '43.
BOLLING BEE CO.
BOLLING, ALA.

For honey's sake, join your nearest Association of Beekeepers.

ALTITUDE OR SOIL CONDITION

Reading the excerpts on nectar secretion in August 1941, American Bee Journal, particularly that of John H. Lovell, on page 371, concerning the effect of altitude, or height above sea level, has caused me to compare experiences here in the state of Victoria, Australia, since 1904, in that respect. I find that on no occasion since that time have low lying sites given as good results from the same flora as higher ones in the same locality, while on several occasions there has been total failure, while higher sites gave good harvests. Then again, in the case of one notable honey tree, Red Gum (Eucalyptus Rostrata) the best yielding country, is certain low tablelands, while the low lying flats and watercourses are rated only second and uncertain.

And yet, considering all the factors known to me, I think that high site and low site, in themselves, have little to do with the results. I do not say that this is never so. Perhaps country thousands of feet up may have conditions of light and air pressure, and temp rature variations, more favorable to nectar secretion than country near sea level, but these hardly apply when higher and lower sites are both less than a thousand feet up, and the higher only a little more elevated than the lower. I have found the lower sites just as good, now and again, while in seasons of normal or heavy rains the lower site suffers by reason of the underground drainage from higher country keeping the soil or sub-soil too wet to allow the plants to get into the right harvest condition at bloom time.

It took me a long time to come to these conclusions—more than thirty years, for the problem of the lay of the land was always complicated by other problems. And it was only the reading of John H. Lovell's remarks on altitude that suddenly linked all my many experiences together, and made me see the one feature common to them all. That one feature was the drainage, particularly sub-soil drainage from higher to lower site, most noticeable in wet years, and doing most harm, but in certain years so slight as to have no ill effect. If the soil moisture on a site is just right for any flora to put it in harvest condition at bloom time, it is likely to be a little wrong on sites lower down, and receiving its drainage. But all kinds of honey flora do not need the same degree of soil moisture at bloom time. Some are no good unless the soil is too moist for other kinds. Or the banking up of stores may be so heavy as to force a flow when soil moisture would be too great for a flow with lighter stores.

These are inferences from Australian experiences. Of course, I cannot say how far they apply to the American sites mentioned in J. H. Lovell's article. I think they would apply fairly well to British experiences with heather. It is credited with much heavier flows on high sites than on low. From what I saw of heather country in Cornwall, and in the Scottish Highlands about thirty years ago I should say the high sites would be much better than the low, in the west coast districts particularly, for rain there reaches in places to eighty inches a year. I have seen there the hills purple with heather bloom, and the streams coursing like silver ribbons down their sides. East coast country, with its lighter rainfall might be different.

My experience in honey harvests spoiled by soil flooding in country with a rainfall of twenty-five to thirty-five inches is long and painful. And I have now come to think that any site liable to receive the drainage of higher country is risky, especially if the country has a clay, or other water holding bottom. Lower sites, with the same rainfall as higher ones, may get vastly more soil moisture, and so put the plants out of harvest condition at bloom time.

I shall give an example of how country can be spoiled for honey production by waterlogging the soil. Certain areas in this state, of very light rainfall, have been devoted to alfalfa and citrus culture, by means of irrigation. A few years after irrigation began, heavy yields of alfalfa honey were obtained, but later these ceased, and now the alfalfa is only useful for bees in drought years. One reason for the decline is the practice of cutting the alfalfa for hay at the beginning of bloom. But the main reason seems to be too much soil moisture.

Before irrigation, water stood in old wells eighty feet down; after irrigation it gradually rose to within sixteen feet of the top. The soil has a stiff clay, water holding bottom, and in the citrus and alfalfa country free water now stands only four feet below the surface of the soil. The citrus trees, in consequence, are short lived, and while the alfalfa grows well for hay, it has ceased to be a good source of honey. The height above sea level is well under a thousand feet, but before the soil got waterlogged, the honey was there; now with an over wet sub-soil it has vanished. And I think that in many cases what looks like the wrong elevation, or the wrong sort of soil, is a wrong degree of soil moisture at bloom time. At any rate, inquiry is worth directing that way.

R. G. Maclachlan,
Australia.

THE COLLOID CHEMISTRY OF SOILS

(Continued from page 445)

the plant or animal uses them. Since the plant or animal must convert a given material into colloids, the processes involved necessarily tax the cell functions more heavily than if it does not have to do so, and thus weaken both its development and its resistance in a corresponding degree.

Conclusion

Now, suppose we let our imagination loose, for a moment, on the future that these developments in soil chemistry and in the production and use of colloids open to us. Suppose that, instead of finding it necessary to destroy insects and diseased conditions by spraying and filling the soil full of poisons, we produce plants that are so strong and vigorous that they can resist pests and disease.

Suppose that, instead of supplying coarse, crude barnyard manures and strong, crude, chemical fertilizers, we see to it that all such material is applied in colloidal condition, who can imagine the wonderful growth and productiveness of plants and trees.

Suppose that instead of burning straw, chaff, waste weeds and leaves, all such organic matter should be converted into fertilizer, would not the soil increase in fertility instead of deteriorating?

Suppose that, in the tropics, where vegetation is so luxuriant, this production of colloidal soil humus by composting and the use of earthworms should be carried on as a business, how many tons of cheap natural fertilizer could be provided to replace the far inferior and more costly artificial chemical fertilizers now so much used?

If, as may be possible after the Great War is ended, we are called on to feed multitudes of impoverished people, it may be that we shall need to make full use of all these things we are now re-learning about the wonders of nature.

And, as for the beekeeper, if the fertility of fields and orchards can thus be greatly increased, will he not find honey production simpler and more profitable.

What we shall do about it is for us to decide.

♦

RAGWEEDS

The scientific name of Ragweeds is (of all things) "Ambrosia." It was named in Europe where it doesn't grow, and before it was known to be the main cause of hay fever.

Taken from the Burlington (Iowa) Hawkeye-Gazette and sent to us by A. G. Kuersten, of Iowa.

Dark 3-Banded ITALIAN
Queens 50c Ea.
SHIPPED DAILY FROM PADUCAH
1 to 9 ..... 50c Each
10 to 24 ..... 45c Each
25 and up ..... 40c Each
THE WALTER T. KELLEY CO.
PADUCAH, KENTUCKY
JUST ACROSS THE RIVER FROM ILLINOIS

We Ship No Bees or Queens After June First
For the remainder of the season. That we may have better post office service we are changing our address from Brooklyn, to Castleberry, Alabama.
CAUCASIAN APIARIES : Castleberry, Ala.
Home of genuine mountain gray Caucasian bees

FINE ITALIAN STOCK
Noted for honey gathering, hardiness, non-swarming and gentleness. Write for prices.
E. J. BORDELON APIARIES Box 33, Moreauville, Lousiana

Selected 3-Banded Italian QUEENS
50c net. THE PUETT CO., Hahira, Ga.

WE ARE BUYERS OF...
BEESWAX
ROBINSON WAGNER CO. INC.
110 E. 42nd ST. . . . . NEW YORK CITY

ITALIANS . . . CAUCASIANS
Queens as good as the best, 60c each
Weaver Apiaries : Navasota, Texas

WE WILL BUY YOUR "CHUNK HONEY" IN THE SUPERS. . . . WRITE US TODAY.
THE FRED. W. MUTH CO. Pearl and Walnut Cincinnati, Ohio

LABELS
FOR HONEY CONTAINERS
We have a full line of honey labels in many attractive colors and designs. A label to fit any size container you may have.
If you wish an attractive label send your order to
AMERICAN BEE JOURNAL : Hamilton, Ill.

HONEY CONTAINERS

The War Production Board Order M-81 permits the use of tin pails for the packaging of honey provided that the producer or packer does not package a greater percentage of his honey in tin containers than he did in 1941.

TIN CAN PRICES

	Cartons of 50
5 lb. cans (no ears or bails)	$3.15
10 lb. pails	4.90
60 lb. cans in single carton, each	.45
60 lb. cans, 16 in carton	5.50
60 lb. cans bare (no cartons) each	.31

Bare 60 lb. cans (no cartons) shipped by truck or rail at customer's risk only and subject to 20% freight rate penalty.

GLASS JAR PRICES

8 oz. Case of 24	$ .67
16 oz. Case of 24	.75
32 oz. Case of 12	.50
48 oz. Case of 12	.55
5 lb. (no bails) Case of 6	.42
10 lb. (with bails) Case of 4	.45
2½ lb. (with bails) Case of 12	.58

QUANTITY CASH WITH ORDER DISCOUNTS

Special quantity discounts apply on orders for glass jars and plain tin pails and cans. If you are in a position to order in quantities the following discounts apply. F. O. B. Hamilton, Illinois.

$ 50.00 worth or more, 5 per cent discount.
$100.00 worth or more, 10 per cent discount.

Reshipping Cartons, Honey Signs, Sample Bottles, Mailing Cases

●

JUST DROP A CARD TO

DADANT & SONS : Hamilton, Illinois

CROP AND MARKET REPORT

Compiled by M. G. DADANT

For our October Crop and Market Page, we asked reporters to answer the following questions:

1. Total final crop compared to 1941.
2. How are bees going into fall.
3. Much feeding for winter necessary.
4. Suggest your prices on honey f. o. b. honey house
   5 pounds 10 pounds
   60 pounds carlot

Final Crop—1942

Although there is still some fall crop coming in at the date that this was written, the final crop is pretty well determined. In the New England states it will run heavy with some unfortunate honey dew in Connecticut. Northern New York may have 75 per cent of a crop, balance of this state much less. Conditions in the seaboard states also run from 70 to 80 per cent of last year with North Carolina claiming as much if not more. Some sections of Florida may be up to last year but most of them only have about 55 per cent. Ranging across the southern coast the crop will be normal with Louisiana claiming more than last year. However, Northeast Texas seems to be the only section which will come anywhere near normal and all southern sections will run from failure to 50 per cent.

Ohio, Indiana, and Illinois will have near failure with the crop being from 30 to 50 per cent of last year but with considerable improvement shown by the addition of the fall flow.

Iowa may have 70 per cent of a year ago but Missouri will rank about with Illinois, Indiana, and Ohio. In Arkansas the crop will be about 50 per cent.

Michigan has come up rapidly although wet weather has interfered, but generally will have 75 to 85 per cent of last year with southern sections being the lightest. Wisconsin and Minnesota will run from 50 to 75 per cent. Minnesota being short in sections. Central North Dakota and South Dakota seem to have almost up to normal with North Dakota running about 70 to 80 per cent.

Central Nebraska along the Platte River and many sections of Kansas will have almost 150 per cent of last year, with other sections running about 50 to 70 per cent.

Oklahoma will have about 60 per cent. The intermountain region as a general rule will run heavier than last year but that is due to some sections, particularly Colorado, which have varying reports from 120 to 150 per cent of last year. Wyoming about 80 per cent, Montana normal. Utah is far and away the best state running from 125 to 150 per cent of a year ago with Nevada lagging behind. Idaho has varying reports with heavier crops than last year, however, which was a near failure.

On the West coast crops are short running from 50 to 60 per cent in Washington and Oregon and dropping as low as 20 to 50 per cent in southern and central California sections with northern California showing a decidedly better crop than other sections.

Eastern Canadian provinces are as bad off as we are here with only from 30 to 50 per cent of a crop. Western provinces will run about like our plains section, with 60 to 75 per cent and this runs clear to the West Coast.

Bees

Bees are going into winter quarters in excellent shape and this is true in practically all sections. This has been helped a lot by fall flows. Probably northern plain sections will fare the worst where many of the packages did not come through and where there are many light colonies. However, many of these beekeepers expect to kill out the light colonies and start again with packages of bees again next year. California and Texas show as bad a condition as anywhere else owing to the light flow of the fall crop. In Texas, spraying of cotton has not been of any help.

Feeding

We do receive reports of necessity for feeding in many instances where there is no fall flow possible. However, we believe the condition of bees to be about up to normal. As stated above, a good many reports of some feeding to be done have come in and we feel sure that where there is no fall flow there will be more feeding necessary than a year ago. This applies particularly to central-western, and eastern sections. All western sections, excepting California, report no feeding is necessary.

Prices

Still no report of fixed prices and still no release from the necessity of staying with our March prices so that beekeepers are in a quandry although many we believe will go ahead and sell.

Most beekeepers have now apprised themselves of the advance of honey and the reports for five-pound sales run from as low as 65 cents to as high as $1.10 with the majority at about 80 cents retail. Ten-pound pails run from $1.50 to $1.85 with a few low $1.25 quotations. Sixty pound cans on the whole are being sold at from 12 cents to 15 cents with somewhat lower prices for amber. Carload lots are being quoted at all the way from 9 cents to 12½ cents and 13 cents with the bulk of the sales and quotations running about 11 cents. We do have some reports of sales at 11½, and a number of sales at 10½ with cans returned. As a general rule in carload lots beekeepers are anticipating from 1 cent to 1½ cents per pound less for amber honey but in retail quantities we believe the effort will be made to maintain a standard price, amber or fall, especially where the jobber has not been large.

Inasmuch as ceiling prices have been suggested of about 11 to 11½ cents for honey, the bulk of the honey we believe is moving at this price or waiting to see just what the ceiling will be.

It becomes a question in the writer's mind whether we will get a ceiling price before the bulk of the crop is moved. Ceiling prices would be a decided advantage in maintaining a standard level.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

HONEY WANTED Cars and less than cars Mail Samples
C. W. AEPPLER CO., Oconomowoc, Wisconsin

EXTRACTED HONEY Bought and Sold
Iverson Honey Company
201 North Wells St., Chicago
Reference: First National Bank of Chicago

THE MARKET PLACE

Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

Rates of advertising in this classified department are seven cents per word, including name and address. Minimum ad, ten words.

As a measure of precaution to our readers we require reference of all new advertisers. To save time, please send the name of your bank and other reference with your copy.

Advertisers offering used equipment or bees on combs must guarantee them free from disease or state exact condition, or furnish certificate of inspection from authorized inspectors. Conditions should be stated to insure that buyer is fully informed.

BEES AND QUEENS

CARNIOLAN, CAUCASIAN Bees and Queens. 1943 prices on request. Tillery Brothers, Greenville, Alabama.

THREE BANDED ITALIAN Bees and Queens. Extra good workers. 2-lb. package with queen $2.00 each; 3-lb. package with queen $2.50 each. Select untested queens 50c each, any number. Health certificate with every order. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, North Carolina.

PACKAGES BEES AND QUEENS—Pure Italian. Prompt shipment, low prices and honest dealings, CRENSHAW COUNTY APIARIES, RUTLEDGE, ALA.

HONEY FOR SALE

FANCY white comb honey $5.00 case; No. 1 clover $4.50; Buckwheat or amber $4.00; White clover extracted 14c; Amber or Buckwheat 12c. C. B. Howard, Geneva, N. Y.

HONEY FOR SALE—We buy and sell all kinds, carloads and less. The John G. Paton Company, Inc. 630 Fifth Avenue, New York, N. Y.

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey and Wax Company, Inc., 265-267 Greenwich St., New York.

WE BUY and sell any quantity, all varieties. B-Z-B Honey Company, Alhambra, California.

HONEY PACKERS—Write us for prices on carload lots of California and Western Honey. We stock all varieties. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, California.

COMB HONEY for sale. Clover, basswood, buckwheat, all grades. Axel Holst, Route 1, Lyons, Michigan.

COMPLETE LINE comb and bottled honey. Pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

HONEY AND BEESWAX WANTED

PLEASE NOTE. While we use every precaution to list only reliable buyers in this department, we advise readers to sell honey for cash or C. O. D. unless they have thoroughly investigated the buyer as responsible on open account.

WANTED: Cars and less than cars of extracted, comb and chunk honey. Spot cash paid for all grades. Submit price and sample. Will call for it by truck if in 300 miles of Kansas City. Can furnish or return containers. Frank King & Son, 5214 St. John Ave., Kansas City, Missouri.

EXTRACTED honey wanted. Send sample and price wanted f. o. b. Bloomington, Illinois. Ed Heldt, Bloomington, Illinois.

WANTED—White or amber extracted honey. Carload or less, with or without exchanging cans. Cash waiting. Send sample and best price to: Honeymoon Products Co., 39 E. Henry St., River Rouge, Michigan.

WANTED—White clover extracted, section and chunk comb honey in large amounts. Quote price and amount. KEDASH BROS., Chillicothe, Ohio.

CASH FOR YOUR WAX the day received. Write for quotations and shipping tags. Walter T. Kelley Co., Paducah, Kentucky.

HONEY WANTED—Truck or carload lots delivered to Sioux City, Iowa. Write us at Wendell and submit sample. R. D. BRADSHAW & SONS, WENDELL, IDAHO.

WANTED--Honey and Beeswax. Mail samples, state quantity and price. Bryant & Cookinham, Los Angeles, Calif.

WANTED—Large quantities of chunk honey in shallow frames; also section honey. Central Ohio Apiaries, Inc., Millersport, Ohio.

ALL GRADES extracted honey wanted. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th Street, Detroit, Michigan.

WANTED—White or light amber in 60's. Send sample and best price. BA-BEE BRAND FOODS, 740 Washington North, Minneapolis, Minnesota.

WANTED—ORANGE BLOSSOM HONEY, also white clover. Extracted, comb and chunk, any amount. Lose Bros., 206 E. Jefferson, Louisville, Kentucky.

WANTED—White clover honey in sixties. State price, quantity in first letter. C. Jankowski, Prairie View, Illinois.

WANTED TO BUY FOR CASH—White and light amber honey. Truck load or carload. Advise price, with sample. Roscoe F. Wixson, Dundee, N. Y.

WANTED—2 cars of white extracted honey. Send sample and price. Alget Sundquist, 41-73 Glenwood St., Little Neck, L. I., N. Y.

FOR SALE

FOR SALE—200 colonies in double ten frame hives, in good condition. Well supplied with honey. About 250 new ten frame supers with drawn combs. No disease. Martin Sebby, Fingal, North Dakota.

1000 good used 60 lb. cans at 13 cents. Cases at 15 cents. Wanted—comb and extracted honey. Also used small metal working lathe. Bizzy Bee Ranch, North Abington, Mass.

200 two story hives near Decatur, Nebraska. No disease. Plenty honey. Clyde Cobb, Belleville, Arkansas.

WANTED

SMALL EXTRACTOR in good condition; also uncapping equipment. J. C. Aspley, Glencoe, Illinois.

POSITIONS AND HELP WANTED

WANTED—Experienced beeman for the balance of this season. State age and experience. $85.00 per month, including room and board. John Kneser, Hales Corners, Wis.

WANTED—A thoroughly experienced beeman for 1943 to work 400 colonies of bees. Man between 40 and 55 years of age preferred. Good wages for right man. A. J. Wolbert, Ellabelle, Georgia.

WANTED—Experienced man in Queen, Package and Honey Production. Steady work all year. Give full particulars when replying. Al Winn, Rt. 1, Box 729A, Petaluma, Calif.

SUPPLIES

YOUR WAX WORKED into quality medium brood foundation for 16 cents pound; 100 pounds $12.00. Fred Peterson, Alden, Iowa.

WRITE FOR CATALOGUE. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

THE ONLY COMPLETE LINE of wax rendering equipment ever offered—the "Perfection" line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

COMB FOUNDATION at money-saving prices. Plain, wired, and thin section. Wax worked at lowest rate. Combs and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

DIFFERENT, that's all. Written and published for the instruction of beekeepers. 52 pages of breezy entertaining beekeeping comment each month. One year, $1.00; two year, $1.50. Sample, 3c stamp.
Beekeepers Item, San Antonio, Texas.

LARGE CASH SAVINGS can be made by letting us work your wax into either wired or plain foundation. Large independent factory manufacturing a complete line of bee supplies including extractors, etc. Selling direct saves you the agents profit. Quick shipment from large stock. Large free catalogue explains everything. Walter T. Kelley Co., Paducah, Kentucky.

PORTER BEE ESCAPES are fast, reliable, labor savers. R & E. C. Porter, Lewistown, Illinois.

MISCELLANEOUS

A WESTERN BEE PAPER, edited and published for Western Beekeepers. One dollar a year or with the American Bee Journal one year for $1.75. Western Honey Bee, 3905 Lemon Street, Riverside, California.

SUBSCRIBE for Honey Cookery News—bimonthly 35c. 3414 So. Western Ave., Chicago, Illinois.

SOMETHING TO SELL—trade, exchange? Do you want help, want honey or what have you? Use the classified columns of the American Bee Journal. They are potent in pulling power. For only seven cents a word your message will go before thousands of America's progressive beekeepers. Send in your copy today. If new in our columns, give us a reference.

CHANGING HONEY SOURCES IN THE SOUTH

By J. J. WILDER

BEE interest in the South is rapidly on the increase, and bee pasture is of much more interest now than in the past. Gallberry is our greatest source of honey, grows all through the Coastal Plain region of Georgia and the Carolinas, covering almost one-fourth of the areas of the three states. Fortunately for the beekeeper, this plant usually grows on low, wet, sour soil that is not suitable for anything except to grow timber and the timber does not affect the growth or yield of nectar of the gallberry. It is an evergreen shrub from two to four feet in height. Where it stands long enough without being damaged by fire, it will even take on a growth from six to eight feet. This great honey plant sits almost on top of the ground without any tap roots, and if there is much moisture its roots are found on top. It would not yield much in a dry climate, or on high land (where it does sometimes grow.) Such land is suitable for cultivation and sooner or later gallberry will disappear there. Cultivation of land crowds out gallberry, as cotton did between 1890 and 1920, but the boll weavil has curtailed cotton growing and gallberry is on the increase, as it occupies much land formerly planted to cotton, besides growing down to the water's edge along the streams and all over the muck land which cannot be used for cultivation. In such places the gallberry grows in all its glory and yields the most nectar.

The short and long cotton have vanished to such an extent that they do not yield any further, but Mexican clover, which grows everywhere throughout the Coastal Plain regions, is far more valuable, and in fact has well revolutionized our summer beekeeping.

The one time great honey plant, partridge pea, that grew so extensively and was so prolific all through the sand hill regions of west and central Florida, is hardly known now as a honey plant, because of the growth of scrub oaks, blackjacks, and red oaks, which have taken up the soil and crowded it out. This has all come about since the land has been lumbered. This naturally has put hundreds of beekeepers out of business who will never go back again.

The chinquapin which grew so extensively all through central Florida is no longer an important nectar source. In former years, it was a great honey plant.

The summer farewell, at one time the glory of northern Florida beekeeping, seems to have exhausted the soil and receded to remote places. This plant was the great source of the South's brightest and clearest honey.

The wonder honey plant is not making much progress in spreading out over the country on account of a limited amount of suitable soil, and the beekeepers are not helped very much by its presence.

The commonly known water weed is now coming on the scene as a surplus yielder, but it grows only in the water, in lakes or slow running creeks. The honey from this source has a fine flavor. Its color is light, with an odd smoky effect.

The low bush laurel, commonly called Calico Weed since the preservation of the forest, is spreading rapidly, and is giving a good yield of fine table honey.

The saw palmetto has always been recognized as one of our best honey plants, and is coming on the scene, of late years, on all wild land that is now well protected from fire. This creeping palmetto growing along with its head of peculiar shaped blades sticking up, containing very dim saw-like edges is with us now as never before as a honey plant. It and the gallberry are taking up all the soil beneath the pine trees.

The bitter weed—one time greatly in our way as a honey plant, because the honey was extremely bitter and hard to keep from mixing in with good honey—has forever gone, while much of the plant remains that does not yield except in a few places mostly in South Carolina.

In some sections of our mountain forest the sourwood is being removed, in order to give more soil for the growth of other plants that the government is putting in; and the beekeepers are beginning to feel the effect of it.

The tulip tree, on account of the value of its wood for many purposes, has almost disappeared in some sections of the Piedmont Plateau where it formerly grew very extensively, and was a great source of honey that all of us remembered so much about in our younger days, for our first sweet mouthfuls of honey came from this source.

We are both hurt and blessed but I guess we are more blessed than hurt, and the future still looks bright for our industry as far as the changing of bee pasture is concerned.

Waycross, Ga.

STATEMENT OF THE OWNERSHIP MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912 AND MARCH 3, 1933.

Of American Bee Journal, published monthly at Hamilton, Illinois, for October 1, 1942.

STATE OF ILLINOIS, County of Hancock, ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the American Bee Journal and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the name and addresses of the publishers, editors, and business managers are:

Publishers: American Bee Journal, Hamilton, Ill.

Editors: G. H. Cale, Hamilton, Ill., Frank Pellett, Hamilton, Ill., M. G. Dadant, Hamilton, Ill.

Business Managers: M. G. Dadant, Hamilton, Ill., J. C. Dadant, Hamilton, Ill.

2. That the owners are:
H. C. Dadant, Hamilton, Ill.
J. C. Dadant, Hamilton, Ill.
V. M. Dadant, Hamilton, Ill.
M. G. Dadant, Hamilton, Ill.
C. S. Dadant, Hamilton, Ill.
R. A. Grout, Hamilton, Ill.
L. C. Dadant, Hamilton, Ill.
R. H. Dadant, Hamilton, Ill.
Louisa G. Saugier, Hamilton, Ill.

3. That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

(Signed) M. G. DADANT,
Business Manager American Bee Journal.

Sworn to and subscribed before me this 10th day of September, 1942.

MINNIE S. KING, Notary Public
My commission expires Nov. 18 1945.

York's Package Bees AND Queens

QUALITY BRED ITALIANS

A GREAT SEASON, LARGEST DEMAND EVER

THANKS TO ALL

With all fairness we wish to state we sold no bees or queens for less than our regular list price and all was supplied from our own Apiaries only. We strived to give you the very best quality possible and comments are bearing this out.

Will continue to supply bees and queens for remainder of season. Rush your order for prompt service. Prices as follows.

Young laying queens	$ .75 each
2-Lb. packages, bees with queens	2.50 each
3-Lb. packages, bees with queens	3.20 each

Queens by air mail add 5c per queen. Queens clipped 10c each extra.

YORK BEE COMPANY

JESUP, GA., U. S. A.

(The Universal Apiaries)

FROM RESISTANT STOCK • QUEENS • PROGENY TEST

There is a definite place for both stocks. Young queens this fall will determine your 1943 results.

Price—1-24, **60c**; 25-49, **55c**; 50 or more, **50c**. Add **10c** per queen for queens from stock bred for **resistance.**

BESSONET BEE COMPANY, Donaldsonville, La.

BETTER BRED QUEENS **3-BANDED QUEENS**

Prepare for next year's crop by requeening with our better bred stock. They have been tried by thousands and have proved satisfactory.

CALVERT APIARIES QUEENS 50 CENTS EACH CALVERT, ALABAMA

Send your cappings and old comb to MUTH for rendering into beeswax. . . . .
THE FRED. W. MUTH CO. Pearl and Walnut Cincinnati, Ohio

Read What Others Are Doing

■ ■ ■

2 Yrs. $1.50

1 YEAR, $1.00; 3 YEARS, $2.00
(U. S. A. and Canada)
FOREIGN 25c EXTRA FOR POSTAGE PER YEAR

SPECIAL

GLEANINGS IN BEE CULTURE
For 6 Months
STARTING RIGHT WITH BEES
96 Page Book, Illustrated
BOTH FOR 75 CENTS

The A. I. ROOT CO., Medina, O.

Gleanings in Bee Culture—1 Yr.
American Bee Journal—1 Year
$1.60 In U. S. A.

For About 75 Years

The Bee Smoker has been the most important tool in the outstanding development of American Beekeeping. It has made large quantity, commercial honey production possible. Little can be accomplished, without the Bee Smoker.

In this time of scarcity and restricted supply of materials, conserve such items as Smokers, Extractors and other items made of metal. Thus spread their use over time and place.

A. G. WOODMAN CO.
Grand Rapids, Michigan

KOEHNEN'S
Package Bees and Queens
For Quality and Service
KOEHNEN'S APIARIES
GLENN, CALIFORNIA

Canadian Bee Journal

Canadian beekeepers too have wartime problems. If you are interested in bee activities "North of the Border," send us your subscription NOW. We will see that you receive each monthly copy regularly.

Each issue contains timely articles of value to beekeepers everywhere, and News and Views from Coast to Coast.

Subscription price, $1.25 per year in U. S. A.

CANADIAN BEE JOURNAL
OSHAWA. ONTARIO

The GOAT WORLD

OFFICIAL ORGAN OF THE
American Milk Goat Record Association

Oldest and largest Milk Goat magazine published. Broadest circulation. Articles by best authorities. Subscription rate: one year $2.00; three years $4.00; five years $6.00.

Sample copy 20 cents
Address:
The Goat World, Vincennes, Ind.

AMERICAN RABBIT JOURNAL
. . Shows the Way to Success

Gives the latest news and views of the rabbit world—an illustrated monthly magazine of general and educational features. One year $1.00; three years, $2.00; sample 15c.

AMERICAN RABBIT JOURNAL
Dept. S. Warrenton, Missouri

The BEEKEEPERS ITEM

The Southern beekeepers, own magazine, but read by studious honey producers everywhere.

With the American Bee Journal makes a combination that covers the beekeeping field.

Send $1.50 and get Both Magazines for a year
BEEKEEPERS ITEM, San Antonio, Texas

BEE SUPPLIES

A. H. RUSCH & SON CO.
REEDSVILLE, WISCONSIN

Manufacturers Jobbers

JENSEN'S QUEENS

Should head every colony not already having a good queen. Time now is short, and next spring may be too late to save those under par colonies. Beginning Nov. 1st the price advances to 75c each; irrespective of quantity. Through Oct. prices: 1-25, 65c; 26-100 60c; 101-500, 55c; 500 up, 50c each.

Jensen's Apiaries, Macon, Miss.

FOR SALE

BRIGHT YELLOW AND THREE BAND QUEENS

GRAYDON BROS.

RT. 2 GREENVILLE, ALA.

QUEENS From Stock
Bred for Resistance

Breeders 42-E-112-U.S.D.A.
55c each
50c each in lots of 20 or more
Prepaid parcel post or express
21 years as commercial queen breeders
Large apiaries—Responsibility

RED STICK APIARIES & CO.
P. O. Belle Alliance, Louisiana
Western Union, Donaldsonville, La.

Got a Hobby ?

YOU'LL MEET the other leaders in your field when you read the magazine that is devoted exclusively to your interest. Rush your subscription today.

Per Year
$1.00 American Bee Journal
$ .20 Poultry Keeper
$2.00 New Agriculture (Sugar Beets)
$ .50 Pacific Poultryman
$1.00 New Hampshire Breeder, 3 years
$1.00 Cackle & Crow, The Poultrypaper
$1.00 American Rabbit Journal
$1.00 American Fur Breeder
$1.50 American Pigeon Journal
$1.50 Pigeon News
$1.00 Hog Breeder (all breeds)
$1.00 Amer. Hampshire (Hog) Herdsman
$1.00 Sheep Breeder
$1.00 The Sheepman
$ .50 Sou. California Rancher
$1.00 American Cattle Producer
$1.00 Beekeepers Item
$1.00 Gleanings in Bee Culture
$ .50 National Live Stock Producer
$ .50 Florida Poultryman & Stockman
$1.00 Florida Cattleman & Dairyman
$1.00 The Country Book, Quarterly
$1.00 Texas Livestock Journal
$1.00 The Eastern Breeder (8 months)
$2.00 Goat World
$ .50 Fletcher's Farming
$1.00 Bantam Magazine
$1.00 Organic Farming

Rush your order today. All orders are acknowledged by return mail. Send cash, check, P. O. M. O., Exp. M. O., or stamps.

MAGAZINE MART, Dept. BJ.
LA GRANGE, ILLINOIS

KELLEY—"The Bee Man"

QUICK
Shipment from Stock

50	5-Lb. Tin Pails	$2.90
50	10-Lb. Tin Pails	4.30
16	60-Lb. Square Cans	5.40
72	5-Lb. Glass Pails	$5.00
144	5-Lb. Glass Pails	9.95

WALTER T. KELLEY CO., Paducah, Kentucky

Procter & Gamble

Just an example of how "Crisco" features honey

Cake
Pie
Honey

"CRISCO CAKES are LIGHTER!
THAT'S WHY CRISCO GOT MY VOTE—AND HUNDREDS OF OTHERS!"
"SURE-MIX" CRISCO wins 4-to-1 vote in nation-wide home-baking tests
CRISCO

One of the many pieces of publicity given the Institute during 1941

Are you helping the Institute?

We should all do our part. Contributions to the American Honey Institute are usually figured on the basis of $1.00 per ton of honey produced. If you have not sent in your contribution for 1941, **send it now.**

SUPPORT THE AMERICAN HONEY INSTITUTE

Send your contributions or pledges to them at Commercial State Bank Building, Madison, Wisconsin

THE POSTSCRIPT

Much interest has been manifested in the Wagner pea which was discussed in an article in this magazine in the December, 1941, issue. Among the dozens of letters which I have lately received asking for more information about the plant, was one which gave me many new facts. This letter came from Victor E. Wagner from the desert of Arizona. He is a nephew of the German plant breeder who spent so many years in improving a wild pea from the mountains of Europe until he was able to offer a new forage plant.

♦

The first plants of Wagner pea brought to America came with Karl Wagner, brother of the originator, to Beaver County, Pennsylvania, in 1888. There was much interest for a time and then the public turned to other things and it was forgotten. When we sought to find seed for our honey plant garden, we were unable to locate anyone who even seemed to know that there was such a plant. After a year or more of search we finally secured some seed from Germany; and the surprising growth of the Wagner pea in our test plots has revived public interest. It shows so much promise in our test plots over four years of time, that we are starting a field test this year for trial on a larger scale.

♦

In answer to the question as to whether anise-hyssop will grow in the South, Gus Williams, of Slaughters, Kentucky, writes to say that he thinks it will, since it does so well for him in that state. Regardless of other bloom, the bees have visited his anise-hyssop from early till late. He failed with his first trial when seed was planted in spring, but had good success with seed planted on frozen ground in January.

In our test plots anise-hyssop has been in bloom for three months, and the bees are still swarming over the flowers, (September 1). It is the most promising plant that we have found thus far for nectar production.

♦

William Langham, a friend of mine who formerly lived at Cedar Rapids, Iowa, but long since passed on, once said: "Science without experience accomplishes less than experience without science." Although much of the world's progress has come about through the blunders of amateurs, recent years have seen marvelous developments at the hands of men with practical experience combined with scientific training.

♦

A Pennsylvania reader asks for information regarding the marketing of horehound. This plant is in some demand as a crude drug but the principal use is in the making of candy. The plant will yield about a ton of dry matter per acre where there is a good stand. It should be cut just before flowering and dried in the shade to preserve the green color. Coarse stems should be removed as only leaves and flower heads are used. The price has been as low as seven or eight cents per pound but is higher now.

♦

From a reader in England comes the report of a near failure of the honey crop with some colonies failing to gather sufficient stores for their own support. Too much rain and foul weather during the bloom. Similar reports come from many localities in this country. Thus we find this year of 1942, when a big crop was most needed, offers an unusually scant return. Those beemen who are fortunate enough to get a good crop will also profit materially by the higher price which prevails this year. This letter coming from much-bombed London talks only of bees and overlooks the war as a subject of comment. Fortunate is the one who can find some compelling interest to help him forget the ghastly struggle in which the world is now engaged.

♦

The plot of stonemint or dittany that came to our test garden from W. E. Bumgarner of Marshfield, Missouri, in April, 1941, has grown into a very interesting bed. It thrives luxuriously in our rich soil, although in the wild state it is often found on dry or stony lands. It is just coming into bloom at the beginning of September and makes a most profuse display of small flowers. It is reported as yielding a light colored honey of mild flavor and spicy taste. It is a really worth-while addition to the ornamental garden as well as valuable for the bees.

♦

This plant, **(Cunila origanoides)** has numerous other common names beside stonemint and dittany. It is also known as wild basil and as sweet horsemint. It is one of the old time herbs often used as a home remedy. It is said in some neighborhoods in North Carolina "Everybody cures everything with dittany." Tea made from it is a refreshing beverage which provides gentle stimulation and may be used to promote sweating in the treatment of a cold.

♦

Now that war has reduced the supply of tea and cocoa there may be a revival of interest in native plants which at one time or another have achieved popularity in the preparation of beverages. Most famous, perhaps, is New Jersey tea, (Ceanothus Americanus) which came into common use at time of the Revolutionary war in protest to the tax which resulted in the familiar incident in Boston harbor. During the war between the states, sassafras tea became a common substitute in the Southeast and in some localities continues to hold its popularity.

♦

The fragrant goldenrod, (Solidago odora) found wild from New England to Texas, has been widely sold in the dry state under the name, "Mountain Tea," and the gathering and drying of the leaves provides a modest source of revenue in some rural areas. In fact, there is a long list of such plants including wild bergamot, sumac berries, some of the hollies, and several mints. In the southwestern desert ephedra is called Desert Tea or Teamster's Tea. Since many of these plants are good bee plants, perhaps they might be grown for bee pasture and for beverage as well.

♦

I have recently been greatly encouraged by visits with two of Iowa's honey producers, both of whom report the solution of their disease problem by requeening with disease resistant stock. Both reported that previously they had suffered serious annual losses from American foulbrood. Both agreed that since they have the resistant stock they no longer have any such difficulty. So many similar reports have come to us that we are hopeful that within a few years this disease will cease to be troublesome. Thousands of these queens have recently been distributed and where entire apiaries have been requeened reports have been uniformly favorable.

♦

My grandchildren discovered a nest of four baby skunks in the vicinity of the experimental apiary. They were cute as kittens and entirely fearless. I began to wonder what should be done about it as I had no wish to repeat the disastrous experience of last year when skunks killed so many bees. The children played with the kitties so much that the old skunk decided that it was safer to move and so saved me the necessity of action. I only hope that they do not return at an inconvenient time and make their meals on bees. Skunks are among the most efficient destroyers of field mice and insects of various kinds.

♦

With the coming of October we return to Hamilton to spend the winter months in the office of American Bee Journal. We leave more than 300 different kinds of plants in the test plots in the hope that some of them may prove to be important to the beekeeper as the source of honey. Considerable time is required to demonstrate the value of any new plant.

FRANK C. PELLETT.

ROOT *Service from* CHICAGO

CONTAINERS

We have large stocks and all packages offered elsewhere.

GLASS PACKAGES
TIN PACKAGES
CARTONS AND WRAPPERS
SHIPPING CASES

Write for our present listing.

We are always in the market for Beeswax and Honey. Tell us how much you have. We pay highest prices.

A. I. Root Co. of Chicago
224 West Huron Street
Chicago, Illinois

Bind Your Journals

Use Them Year After Year

From year to vear you are receiving much valuable material. If you keep it in good order so that it may be easily referred to, it will be of great service.

Our new binder looks like a book. IT LIES FLAT. It is bound in green cloth, stamped in gold—a handsome addition to any library. With simple hooked wires you are enabled to snap twelve copies of American Bee Journal in the binder one at a time as they come to you.

We guarantee to refund your money if you are not satisfied. The price, postpaid, is $1.25.

American Bee Journal, Hamilton, Ill.

46 Years' Experience

We are manufacturers of beekeepers' supplies and can promptly furnish everything a beekeeper needs; SECTIONS, HIVES, SHIPPING CASES, etc.

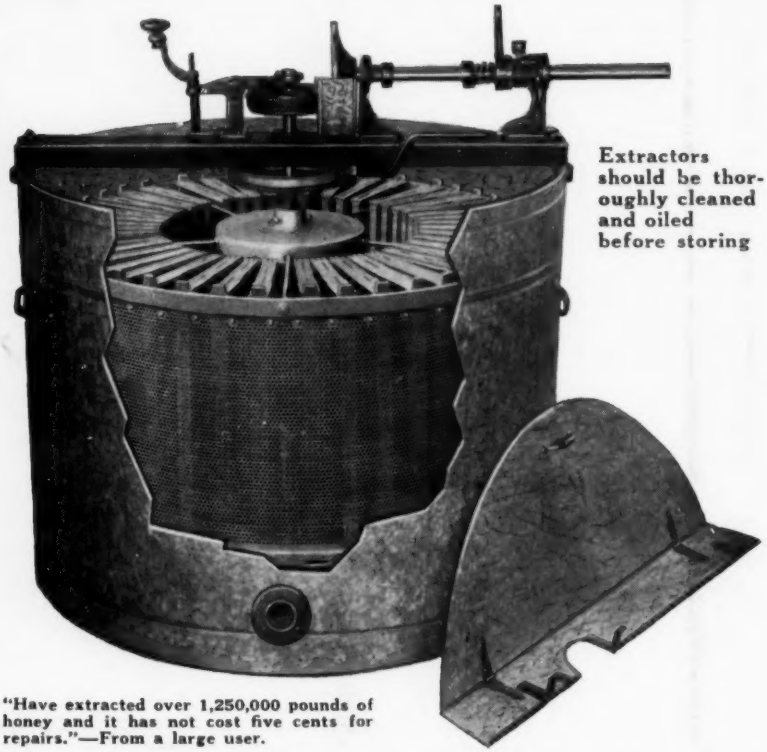
The manufacture of one-piece sections is one of the specialties upon which we pride ourselves. We use only the choicest SECOND GROWTH basswood in the manufacture of sections, and all are perfect in finish and workmanship.

WRITE FOR OUR BEE SUPPLY CATALOG AND COMPARE PRICES BEFORE YOU BUY.

MARSHFIELD MFG. CO.
MARSHFIELD, WISCONSIN
Established 1896

The heart of comb honey is foundation. The biting quality of the honey, that delicate center taste is foundation. It must literally become a part of the honey, so tender, a touch of the tongue will crumble it; yet be so strong that bees work it out quickly and easily. Dadant's Surplus Foundation, fragrant and pure, thin and sweet, blends so naturally with your finest comb honey, that your market grades are better and your sales are quicker.

Dadant & Sons
HAMILTON, ILLINOIS



Extractors should be thoroughly cleaned and oiled before storing

"Have extracted over 1,250,000 pounds of honey and it has not cost five cents for repairs."—From a large user.

Not For Sale

for this year

But our job is to see that you secure the greatest efficiency out of your present machine.

Root Extractors are built to give a lifetime of satisfactory service. Many have been *in use for over 50 years* without one cent for repairs.

Extractors purchased 50 years ago or less can be made to give added years of service. We have a fair stock of parts.

Let us quote you on repair parts.

HONEY LABELS

ATTRACTIVE BRIGHT COLORS

CATALOG OF 30 DESIGNS FREE

► *MAIL YOUR ORDER NOW* ◄

THE A. I. ROOT CO.

MEDINA, OHIO

Root QUALITY BEE SUPPLIES

Root QUALITY BEE SUPPLIES